AMERICAN BEE JOURNAL

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AMERICAN BEE JOURNAL

EDITORS: G. H. CALE, FRANK C. PELLETT, M. G. DADANT, J. C. DADANT

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Our Cover Picture—Pussy Willow

In "American Honey Plants," Pellett says: "In the North the blooming of the pussy willow is among the first signs of spring." It furnishes some of the first honey and pollen of the season, to speed new eggs and new brood areas in the rush for major flow strength later. Its bloom brings the warm glow of well-being to the ardent beekeeper, that will spread to a degree so aptly called bee fever.

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● NEXT MONTH

MAKING A PROFIT OUT OF PACKAGES ♦ Some do know how, perhaps even better than we do. Some do not. So let's give our way and hope that it helps * * * * * * * * SHALL OURS BE INTENSIVE OR EXTENSIVE BEEKEEPING? ♦ Whitman Coffey says both have problems and he suggests a way to solve them * * * * * * * * WHAT IS ROYAL JELLY? ♦ If anyone knows what it is, R. M. Melampy is the man. He tells us what he has found out about a little known but apparently quite important substance.

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Carroll Swanson

IS BEEKEEPING IN STEP?

IN 1852, the movable frame hive was introduced to beekeeping by L. L. Langstroth; in 1857, J. Mehring invented bee comb foundation; in 1865, Major D. Hruscka developed the honey extractor; in 1879, James Forncrook produced the one-piece section. Since then, what has been done for beekeeping?

Improvements have been made in all four of these developments. We have better hives now, reinforced foundation, standardized sections, honey extractors of greater capacity and greater efficiency. But have we anything new?

We know more about bee behavior and how to build colonies to full strength at the proper time. We have better methods of handling honey for market and can produce bigger crops of honey. We know more about honey producing plants and about producing and caring for package bees.

Now we are about to profit from an improvement in the bee itself. A disease resistant strain is being developed and should soon be available. This is important enough to add to the Big Four just mentioned. I wonder, however, if we should not bring about an improvement of equal value in the honey market?

Our product is not an absolute necessity and it has competition. The government will not pay us for reducing the number of bees we own, nor can we make a certain per cent of our colonies remain idle. So it is up to us to get the most for our honey. We should not compete among ourselves to lower the price. A difference of one cent a pound is not much to the consumer, but it makes a great difference to the beekeeper if he gets six cents instead of five cents in carlots for his crop.

We should not feel discouraged if we do not make the money we did in the most favorable years. We remember those times like old people remember the coldest winters until they believe all winters were that way in the good old days. Margins are less now, interest rates are lower, commissions are less. Immediately after World War I, farmers were prosperous. Honey retailed at 30 cents. But, remember, too, that at that time a cheap automobile tire cost $20 and a silk shirt cost $10. Yet, neither the tire nor the shirt wore like those we now use that are priced more moderately. The impression among many people today is that we have "too much;" too many men wanting jobs, too much wheat, too many factories, too much corn, too many failures, too much cotton, too much gold. Actually I believe there is too much difference among us as individuals. Some day the present cycle will change and I think that the change has already begun.

It is a common habit today to boost prices and stifle demand. Every time a commodity is eagerly sought after, the price is raised and people want no more of it. *When we learn we should let a market boom without raising prices, we will have improved business, employment and payrolls.* Such an improvement in business should make a demand for honey that would in turn decrease the supply. However, to advance prices as soon as there is a demand, creates a tendency to turn consumers against us.

In manufacturing, the limit of production is based on sales; in beekeeping the limit of sales is based on production. If the beekeeper produces fifty pounds of honey per colony, he sells it; if he produces two hundred pounds per colony, he sells that also. There is no overproduction in beekeeping. Some beekeepers think if production were greater, the demand would actually increase because there would be more advertising done and more uses found for honey.

I think, too, we have made a mistake in pushing comb honey, our first and finest product, off the market. Comb honey cannot be imitated and there is no possibility of misunderstandings of it as a product. Beekeepers located where good comb honeyflows occur should be producing it. Quality section comb honey, bulk comb honey and extracted honey should entice the public to use all the honey we can produce. Under such a healthy situation, if the beekeepers themselves or the honey packers do not drive the price too low, there will continue to be profits.

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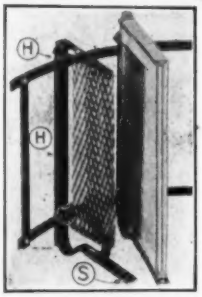

A honey producer in Montana ordered a set of Wings for a 45-Frame Radial. In error only 44 were sent. After installing a letter was sent asking us to hurry on the shortage. The vacancy was the only place showing comb breakage.

In this semi-arid district the honey was extra thick and ropy and difficult to remove from the combs and breakage was heavy even at low speeds. The Wings speeded up the extracting, eliminating breakage at higher speeds necessary to get combs dry. The construction is such that the more speed the more supporting pressure on the surface of the comb.

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Youngblood, Frank, Manteca, Calif.

Our Association will have for sale at $2.25 each, some hundred and fifty, three-pound packages of bees. These bees have been donated to the association by the members and are being offered for spring delivery. Anyone interested in this lot of bees, please write our secretary, T. L. Nicolaysen, Salida, California.

EDITORIAL

ORDER PACKAGE BEES NOW

THOSE who have not already placed orders for the package bees needed this season should do so at once. The package season is short and the shipper must make plans some time in advance in order to make prompt deliveries.

The long period of severe cold is likely to result in the loss of many colonies which will need to be replaced. This added demand along with the normal volume is likely to tax the resources of the shippers and delay shipment of unexpected orders.

A careful spring examination should be made at once to make sure all losses are known in order that replacements can be provided for promptly. Winter losses may be serious even though all are replaced with package bees but if losses are discovered too late for replacement much of the year's income may be curtailed.

♦

IMPROVEMENT OF BEE PASTURE

FROM Mr. Ardon F. Denlinger comes the interesting suggestion that it is time to begin the cultivation of plants for bee pasture. He says that our present honey plants are at the stage of the wild plum as compared with the improved varieties now in cultivation. He contends that skilled plant breeders can develop plants which will produce a greatly increased supply of nectar.

Mr. Denlinger further states that honey production can never be a dependable business until we "take it out of the catch-as-catch-can class as far as nectar is concerned and put it on the basis of cultivated crops." Migration according to him does not solve the problem.

We must recognize the fact that under present conditions, honey production is a precarious undertaking. A change in the farm practice of the neighborhood can easily compel the beekeeper to move to a new location as hundreds of them have been compelled to do in recent years. One large scale operator comes to mind who left Colorado when sugar beets replaced the alfalfa on which his bees had pastured. For a few years he found good pasture in New Mexico but was compelled to move again when his neighbors used so much poison in spraying their fruit trees that his bees were killed.

If, as Mr. Denlinger contends, it is possible by selection to secure strains of plants which yield nectar in sufficient abundance to justify cultivation for the honey alone a greatly improved condition would result for the beeman. Perhaps it may be possible to combine the cultivation of crops which yield nectar freely and at the same time are useful for another purpose and thus get a double income from the cultivated area. At any rate the suggestion is worthy of some attention in view of the crisis that confronts so many honey producers at present.

♦

DRIFTING OF DRONES

IT has long been assumed that drones drift freely from one colony to another for long distances. The frequency with which young queens are mismated in queen-rearing yards has seemed to sustain that assumption. Now comes C. G. Butler, of the Rothamsted Experiment Station, in a report in the December, 1939, Bee World, which throws doubt on this long accepted view.

In one series of experiments several hundred drones were marked with quick drying cellulose enamel and returned to the hives from which they were taken. The drones from each hive were given a distinguishing color as red, blue, yellow, etc. It is very surprising to learn that although a careful watch was given from May until most of the drones were driven out in autumn, "only on six occasions was a drone found to have drifted into another hive." Drones taken to a considerable distance and released returned to the parent hive. When swarms emerged the marked drones

often attached themselves to the swarm but otherwise remained constant to the home colony.

Mr. Butler states that results are incomplete and that several years' observation under various conditions will be necessary to draw proper conclusions. However, enough has been done to indicate that there is far less tendency of drones to drift than has been recognized.

This experiment has a very important bearing on the problems of the queen breeder and it may be that further investigation will enable him to control matings more easily than he has thought. We would like to see more attention given to this particular matter in order to learn what we need to know concerning the habits of the drones.

An attempt was made to make similar observation at our experimental apiary but in every case the marked drones promptly disappeared, for what reason we were unable to decide.

♦

HOW MANY MILES PER POUND

A correspondent from Washington, D. C., asks for an estimate of the number of flowers visited by bees in gathering a pound of honey. It is an interesting speculation and one which would interest the general public. In view of the never failing interest in bees, we beemen have been very shortsighted in failing to capitalize this interest to a much greater extent.

Someone has estimated that the bees travel a distance equal to a trip around the world in gathering a pound of honey. While it is impossible to verify the accuracy of this statement with very definite proof it is probably as good as any. The next question is "how many flowers do they visit along the way?" One has only to follow a field bee for a few minutes to learn that she visits a large number of flowers for every mile that she travels. Under ordinary field conditions she may visit several hundred flowers in a mile of flight. This is especially true in fields of clover where flowers are massed in immense numbers.

If we assume that the bee visits a hundred blossoms for each mile of travel we have the surprising figure of 2,500,000 flowers visited for each pound of honey produced.

This again suggests enormous benefits to the farmers whose fields are visited through the distribution of pollen among the flowers. In the visits to more than two million flowers to get a pound of honey the bees insure the production of fruits, vegetables or seed worth from ten to fifty times the value of the honey. A little calculation will demonstrate that the services of the bees are little appreciated by the general public.

♦

DRY WEATHER

FOR several years past there has been common complaint of dry weather. Some areas in the Southwest have been too dry every year for a long time, while further east drought has been of shorter duration.

Recent news reports indicate that the early weeks of the present winter have been the driest on record over the greater part of the country. Even the Gulf Coast region with a normal heavy rainfall is reported as having received far less than the usual moisture.

There is general anxiety as to the effect of this dry autumn and early winter on next year's crops. The beekeeper is very sensitive to weather conditions and since the honeyflows are usually of short duration his year's income often depends upon conditions that may prevail but a very short time.

♦

COMMON PROBLEMS

WHEN we feel that the problems that we face are different from those of other days it is well to take down the old magazines of the 1880's and see how familiar the subjects then under discussion are today. The stories of drought, hard times, short crops and low prices are so much like what we are hearing now that they might well appear in current publications.

It appears that most of our difficulties are similar to those of mankind in all ages. Although we have the advantage of many new mechanical aids, we seem to have made but little progress in the solution of fundamental problems long common to the race.

WAYS TO MAKE INCREASE

By G. H. CALE,

Illinois.

THE conventional way to make increase in the existing number of colonies today is to buy package bees for spring delivery. However, let us set this aside as well enough understood to need little comment. Our subject is confined to plans which include for the most part, the use of bees on hand to give of themselves to produce new colonies.

An old way, and one still much used, is to select the weakest colonies in spring to be broken down into nuclei, which, with new and selected queens, are allowed to grow as they will into full colonies. This removes such colonies from honey production. The resulting nuclei, well cared for and provided with full sets of combs, may, by fall, produce some surplus honey.

About three nuclei may safely be made from each original colony. More are of doubtful value. Each colony to be so divided should have at least three combs of brood to begin with and division should be done during fruit and dandelion bloom in spring. Queens may be secured from southern breeders as it is too early to raise them at that time in the North.

In managing nuclei from colony divisions or made in any manner, it is best to take them at once from the yard in which they are made to another yard or location at least two miles from the place of origin. Then the bees in each divide will not return to their old locations, to drift into the divisions left there, increasing their population abnormally, or to drift to neighboring colonies, so badly depleting the adult force in the nuclei that their growth will be held back as a result. However, when they are located where such return flights are impossible, their growth, after the new queens begin to lay, is much more rapid and satisfactory.

Obviously also any nucleus or division made in spring or at any other time must not be allowed to be without stores during the time when it is growing into a full colony. If Nature does not supply an income of nectar sufficient for this growth, the beekeeper must take a hand and see that sugar syrup or honey, safe to use, is given to the bees whenever they need it.

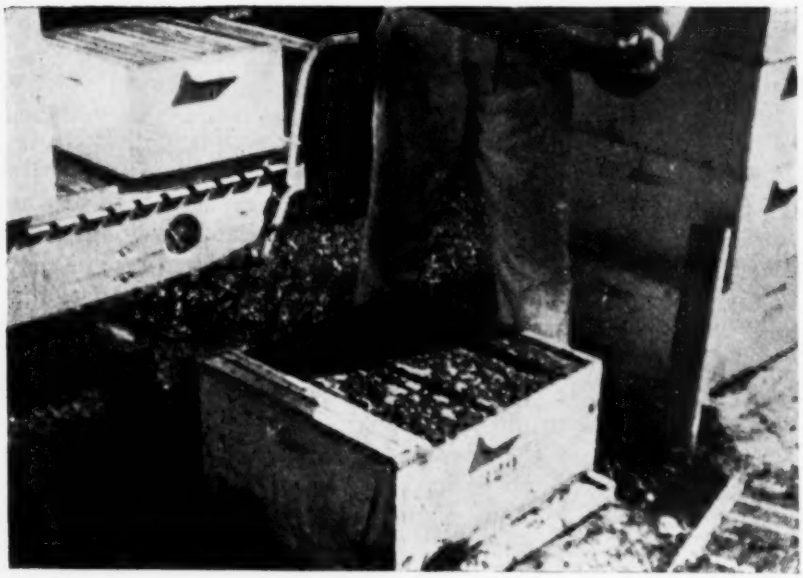
Another consideration of importance in making nuclei for increase is, if possible, to use drawn comb for the purpose. Foundation is much more satisfactorily built into combs by full colonies in a honeyflow than by small nuclei unable to work the amount of wax which foundation requires them to do. Early made divisions also may not have sufficient pollen to grow well. Unless combs of pollen are available, therefore, it is better that such divisions be attempted only when natural pollen is at hand in abundance.

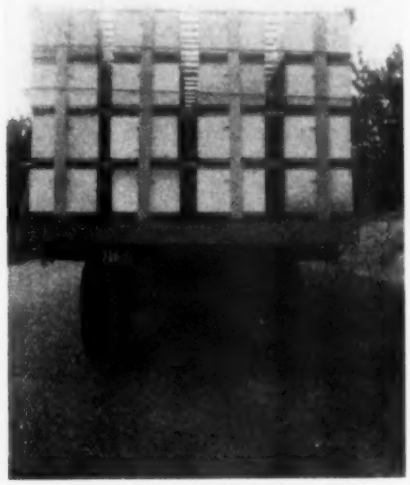
Packages from Your Own Bees

A handy way to make increase, and yet not spend much time doing it, is to carry package cages with you, with a scale and funnel, as you visit various yards, so any colony which has unusual strength may be robbed of some of its adult bees in the regular way of package making, three pounds or more of bees shaken from the combs into a cage with a new queen. These, hived just as packages are hived when received from the South, give a good account of themselves. Colonies, of course, should not be depleted of bees beyond the point where they will again reach good honey gathering strength at the time of the major honeyflow. These packages, too, should not be hived in the yard of origin, but placed at a satisfactory distance where they will not drift.

Using Surplus Brood and Bees

There are times when brood beyond the requirements of the colony is handy to use for increase by removing the surplus brood, with bees, into four or five comb nuclei which, as advised before, should be hived in a yard away from the point of origin. These new divisions with select stock will make full colonies quickly.





Above, a truck load of newly made divisions from fall colony splits going south to grow into new colonies for next year. (Left) Colonies like this one in spring will give bees and brood for divides with little loss in flow strength.

Make sure the brood is from healthy colonies.

There are two times when this may be done to advantage—during the early dandelion flow in the spring here in the Middle West, or after the white flow of summer, where there is an interval preceding the second or fall flow.

At these times, brood and bees (without queen, of course) may be removed from colonies which can spare the loss. In spring, do not reduce brood to less than four combs. If the queen of the colony is a vigorous layer and there is more brood than this, it does no harm to take it. In fact some colonies that would otherwise swarm can be kept from doing so by such clearing of the brood nest.

In making the later or summer divides, after the white flow, it is best not to reduce the colony more than to a minimum of five combs, with the certainty that the queen is all that she should be.

These combs of brood and bees may be assembled in nuclei hives built for the purpose or in full hives to be taken at once to the yards in which they will remain and treated as any other division would be.

The Queen Reservoir

Since we are laying down a program of increase which is more or less a fill-in program, during the season's management, it is nice to have queens on hand whenever they may be needed. A good way to insure having queens when you want them is to raise a quantity of your own, or have queens from your breeders sent to you, ahead of your program, and put them in holding frames. These may be kept in nuclei without queens, but with brood and bees, first removing the attendants from the queen cages if any are present, and placing the cages, candy side down, against the bottom of your holding frame with the wire of the cage exposed to the bees of the nucleus so that the queen in each cage may be fed throughout the time of her confinement. Such holding or reservoir frames may also be put into regular queenright colonies over at one side.

Queens so reservoired for two or three weeks will suffer no harm from their confinement. Under usual conditions, the loss will not be over 10 per cent of the total number. When removed for use, most of these queens will be found enlarged and actually laying eggs on the wires of the cage and on the candy.

Multiple Divisions

We have been lately trying a new plan of increase from our bees which satisfactorily supplies a portion of our annual requirements. We call it multiple division. In the spring a number of our best colonies are selected for the purpose. Let us suppose we set aside five colonies from which to make multiple divides. The program runs something like this.

In very early April we divide each colony in two, taking the half without a queen to a new location and providing it with a queen from one of our breeders. The other half remains on the old stand. Since the divisions are made without regard to brood, we call them bee divides. Our Iowa resident manager, Elva Kirlin, is the daddy of this idea.

At the beginning of the white honeyflow or during the early part of it, these divides are again each divided into two parts and relocated in the same way. We now have from our original five colonies a total of twenty divides. During the fall flow, we increase this by about 25 per cent so that we would end up the season theoretically with twenty-four new colonies ready for winter; sometimes more, sometimes less. It takes a good fall flow from heartsease, Spanish needle, or aster to fatten these last divides.

The season's divides are wintered and the following spring, the first of April, each one is again divided, giving us, theoretically, forty-eight new colonies from the original five with which we started the year before. However, the program never reaches this point. It will approximate it by about 75 per cent, so, starting with five colonies, should result in at least thirty to thirty-five new colonies, ready for the flow the succeeding year.

This work may be done at odd moments in a place by itself, provided that, at each division, the new queen, with her portion of the original colony, is located where drift does not occur. Two miles or more away is the usual rule.

By purchase of packages or by some method of division, most beekeepers are now finding it easier to maintain their numbers of bees with less attention to the individual colony. The important thing is to keep selected stock at a high point of productivity. With such a scheme of operation, the annual losses are greater than they used to be, with the more careful and more painstaking beekeeping our elders learned to do. Most of the larger operators report annual losses from all causes of about 25 per cent a year. This makes it necessary to provide new colonies each season in larger numbers than formerly. These new colonies, however, seem to be the best ones for production for at least a year after they are started.

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DIXIE IN JANUARY

The Bond Apiaries, Union, Mississippi, sent us this picture of hives there to illustrate the trick the weather man played on folks down south in Dixie in January. Zero weather for the first time in many years.

PRACTICAL PROGENY TESTING

By E. C. BESSONET,

President Southern States Beekeepers Federation,

Louisiana.

THE first step in establishing a progeny testing program begins with the selection of breeding colonies to meet the requirements we wish to have in our future bee. Assuming we are working with three things in mind, disease resistance strain, and productivity, these objectives form the basis of our program and through a process of selection should in time develop a better bee. It is unfortunate that we breeders are in the south, and must have our bees checked in the north for the characters we want.

The next step is to check colonies to find those with these desirable characters for foundation stock. Since our selected strain must produce honey in the north and probably winter there, it is better to select a dark strain rather than a light one since they are more apt to provide honey for winter in their brood combs and keep their hive tight against winter. There is apparently some correlation between the color pattern and these habits.

Also in selection, population is an essential consideration, since the maximum honey production can only be reached with well populated colonies. At no time should we sacrifice these important things to base our selection entirely on gentle behavior.

It is becoming accepted also among scientific breeders that a definite corelation exists between the type of brood and the resulting population. We classify brood as scattered, brood of medium density, and brood of great density. The latter is the most desired. Obviously too, if any disease is found in any strain with which we work, this should be unconditionally disqualified.

Experience in studying brood will enable the breeder to predetermine the future development of the colony after a queen has had time to establish her brood area. Even combs of brood, with few open cells, indicate the queen is good and will eventually produce a good colony. Queens with scattered brood will fail.

Scattered brood is attributable to low viability when large numbers of eggs or larvae are removed from the brood area for various reasons. That colony will not build up normally. Attention to brood type demands much emphasis and has a direct connection with crop. For this reason honey producers could materially increase their production by eliminating poor queens in their early stages, replacing them with better ones.

Comparing Daughters

Assuming your desirable colonies have been selected for breeding, the next step is to obtain daughters from them for comparative test to determine which are producing the most desirable daughter progeny. This means accurate records.

The usual procedure is to test the prospective breeder one year and her progeny the next, giving the queen which is found acceptable three years before enough records are at hand. In that time many of them will have died.

During the past two years I began testing progeny of some queens after they had been introduced a sufficient time to establish their colony and show visible characters. Only a small percentage of the queens were fit for breeders. In the second year I found five of the best breeders showing up well by first testing their progeny.

My breeding records support the theory that selecting queens from heavy producing colonies is not a way to get breeder selection unless the queen breeder himself has been able to fix the character of his stock so the majority of his queens will also mate with a selected drone parent. For instance, out of five queens from the North selected for honey production, three were used in progeny test with our own stock and yet their performance rated sixteenth, seventeenth and thirty-fourth on our list.

These queens themselves probably mated with inferior drones reflecting unfavorably on the progeny stock. We must keep records and intelligently build up the desired characters not only from breeding colonies but from drone colonies.

Our hope of a better bee will materialize when we can determine the characters which we are actually trying to establish in our stock and when we can perpetuate these characters through intelligent breeding. This program will receive the approval of any good geneticist.

When cells are grafted, the frames should be numbered and the cell starters and finishers should have numbers also. The record book shows the date the cells were grafted and from which breeder number the larvae came. As soon as the cells are removed from the finishers, they should be kept separate from those which are from other breeders if more than one breeder is used on the same day.

The queen nuclei should also bear some kind of record so the operator will be able to show the date of the grafted larvae for future reference. All queens destined for outyards must have the breeder number marked on the queen cage and when the queen has been introduced safely the number of the breeder is put on the board with other records to indicate the condition of the colony at the time of introduction.

I advocate using "F" for fair colonies, "W" for weak colonies, and "S" for strong colonies, with other identifying marks which the breeder wishes to observe. The date the queen started to lay is essential, as we must consider the time she begins to lay and other vital factors to judge the development of the colony.

If, for any reason, the colony becomes queenless, another queen should be promptly introduced and her records added to those of the first one. After the season is over, our checking will assist us to determine the number of queens from any breeder that missed during the season. If the breeder has a swarming or supersedure propensity, we will know it definitely and take prompt action to eliminate the breeders causing undue progeny trouble in the outyards.

I have found breeders producing queens with a marked supersedure tendency indicating that some queens are in a way responsible for supersedure in their own progeny. Nevertheless, the queens from the supersedure lots were among the largest and best of those produced. The size of the queen, therefore, is of no importance in judging the individual.

Lack of complete data on the various causes of supersedure is due to so many factors. Probably the interest manifested by honey producers in this trouble is also a factor. Up to fifteen years ago, few queens and packages were shipped north for

ten years, the package and queen business has developed to a marked degree and this, of course, reflects on the problem.

It is also possible that the practice of producing bees in the South for northern environmental conditions is the cause. The southern breeder is not entirely to blame, therefore no definite data are at hand. The conscientious breeder is just as puzzled about the matter as the buyer and equally anxious to determine the cause and eliminate the trouble.

Summary

To summarize some of the cardinal points in a progeny testing program, consider these details, conscientiously applied:

(1) The determination of a desirable strain for the section of the country in which it will be used.

(2) In selection for breeding, honey production should be the main objective. (Possibly, later, disease resistance.)

(3) A study of types of brood, honey production. During the past so good and bad will be differentiated to indicate the value of the queen as a potential breeder or a potential honey producer.

(4) Our ability to develop desirable characteristics which will in itself depend on your own knowledge of the character of the stock, and your understanding of genetics.

(5) The establishment of a comprehensive system of records so that all possible facts may be available.

(6) Judging the progeny on the performance of daughters from individual breeders which show the best average and the best perpetuation of the selected characters.

(7) Avoid inbreeding by using good drones from unrelated queens.

(8) Eliminate undesirable drones from other apiaries, trees or similar places.

(9) The use of a homozygous rather than a heterozygous strain.

(10) Progress will be slow. Remember you have a lifetime job.

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SOUTHERN BEES IN A JAM

Carl M. Teasley (Tennessee) sent us a clipping from the Associated Press which asserts that Florida bees, and bees in other parts of the South, are in a jam for food, because of the killing of honey sources by the recent freeze. It reports an experience of John N. Demuth, of New York, who carries bees south every year which shows that his northern bees in the South stored up pollen and nectar while the southern bees, not so provident, laid themselves open to starvation following the inclement weather.

Left, Don Barrett, Michigan Inspector, gives the season's report. They do a good job of disease control in Michigan. (Photos by Carl Jorgensen.)

Right, visitor, Dr. Dyce, Ontario, a near neighbor, makes converts to honey processing and cooperative selling.

THAT MILLION DOLLAR MICHIGAN MEETING

THE source of this title lies in the talk by T. W. Otto, Secretary of the Chamber of Commerce, Lansing, Michigan, at the beekeepers' annual banquet at Michigan State College, East Lansing, February 1. The title was "In Spite of the Depression, I am Still Rich." Secretary Otto has given this same message to groups in Michigan many times. It still brings cheer to the eye and hope to the heart. The burden of it is the old adage, "No matter how bad things are for you, there are others for whom things are still worse." Mr. Otto figures he is a multi-millionaire because he has a million dollar family, a million dollar wife, a million dollar pair of eyes, two million dollar arms, a million dollar health, two million dollar legs and a chance to work today for the things he needs tomorrow. A true American heritage, which few of us appreciate.

He called the attention of the 200 people at the banquet to the fact that they were meeting without asking anyone's permission. They were under no necessity to go to the

(Please turn the page)

The speakers were "forced" into the limelight by Carl Jorgensen's clicking camera. Here they are. Take your choice.

Ruth Hoover guards the ladies contributions of honey food. We see it everywhere these days but none better than in Michigan.

Secretary Kelty and President Markham contend for the floor (but good naturedly of course—the key note in Michigan is cooperation.)

governor of Michigan to ask if they could meet, nor did he have to submit a text of his speech to any authority for approval or for refusal. The right to the pursuit of happiness, civil liberties, freedom of speech,—good American heritage. No doubt that they are worth untold fortune to every American citizen, and are seldom appreciated by the average of us.

The Michigan meeting was well attended, most excellently well. Held in conjunction with Farmers' Week at Michigan State College, it pulled out an attendance of from two to three hundred beekeepers, many of whom were among the largest honey producers of the state. Young men made up the majority of those in attendance; young men, whose eyes are open, whose minds are keen, whose purpose is fine, bringing new life to our industry. They are apparent everywhere, not only in Michigan, but wherever we go these days.

Doctor Dyce was a visitor from Ontario and I expect he brought a message to Michigan beekeepers which will result, in my prediction, in probably the first producers open cooperative, covering a state-wide territory in the United States. If Michigan doesn't take such a step, she will not be Michigan and I will miss my guess.

It is quite likely that should the present low ebb continue for honey, producers everywhere will be forced either to go out of the business or to get together to save themselves. Dr. Dyce outlined the plan followed by the Ontario cooperative and now adopted by most of the Provinces. Canada is ahead of the United States in honey marketing. The plan of the Ontario cooperative as given by Dr. Dyce will be covered in a separate write-up as will material from other talks at this meeting.

Canada as a whole produces about 38,000,000 pounds of honey and under the cooperative set-up, the Ontario cooperative was able to market, either on the domestic market or on the English market, five and one-half million pounds of honey last year. Their per capita consumption of honey of 3 pounds per person is much above that of the United States, only exceeded by New Zealand which has a per capita consumption of 4 pounds per person.

Dr. Howard Potter of Ithaca, Michigan. newly appointed director of marketing and grading in Michigan, acquainted those present with the demands in the new grading setup, which requires grading of honey according to standards practically the same as those recommended by the United States Department of Agriculture. It is a step in the right direction. Other states should follow too. Wisconsin, of course, has had a grading regulation for some time.

Friend Elmer Carroll, editor of Michigan Beekeeping was the ringleader at the annual banquet and he did a proud job of entertaining, particularly with the Honey Harmonizers Band for whom the crowd had nothing but hearty congratulations. G. G. Puett, one of the principal speakers on the association program, received a lot of publicity for a pound of comb honey purchased at $3.00 to start the ball rolling for an honorarium for the entertainers. This item got into Associated Press and resulted in much publicity. Three dollars a pound for honey is news all the way through.

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FLORIDA STATE ASS'N.

The annual convention of the Florida State Beekeepers Association was held in the Municipal Auditorium at Gainesville, Florida, on October 16 and 17. The meeting was called to order by the president, L. M. Dewey, and Dr. U. S. Gordon, pastor of the First Presbyterian Church of Gainesville, delivered the invocation. Mayor-Commissioner J. M. Butler welcomed the group, with President Dewey responding. The principal speakers were T. J. Brooks, Assistant State Commissioner of Agriculture; J. D. Haynie, Assistant Apiary Inspector; Dr. O. D. Abbott, of the Florida State Experimental Station; C. H. Bishop, representing Sears, Roebuck & Co.; Senator J. J. Parrish; Dr. L. M. Rhodes, representing the State Marketing Bureau; J. M. Coughlin of the Owens-Illinois Glass Company; A. V. Dowling, Apiary Inspector of the state of Georgia; J. J. Wilder, of Georgia; Fred W. Muth, of Cincinnati, Ohio; R. E. Foster, State Apiary Inspector, and several other prominent beekeepers. The Auxiliary of the Florida State Association also had part on the program. Mrs. House, the president, introduced the following speakers: Mrs. R. E. Foster, Mrs. H. S. Foster, Mrs. Grace Warren, and Miss Isabella S. Thursby, State Home Demonstration Agent. Their program was very educational. The two outstanding speakers of the program were C. H. Bishop and Dr. O. D. Abbott.

There was a lengthy discussion on the use of carbolic acid in taking off honey, resulting in the following motion being passed unanimously:

> "That the Florida State Beekeepers Association go on record as being opposed to the use of carbolic acid in taking off honey, and a copy of this motion be sent to the Beekeeper's Item, The American Bee Journal and Gleanings in Bee Culture, with the request that it be published."

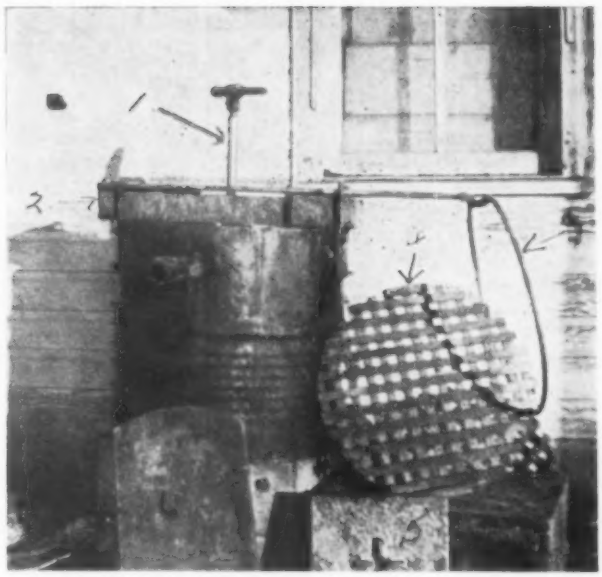
The following officers were unanimously re-elected: L. M. Dewey, president; L. M. Lewis, vice-president; W. H. Williamson, secretary-treasurer. P. C. Shuping and R. C. Allen were re-elected to the board of managers.

W. H. Williamson,
Secretary.

HOW TO IMPROVE THE QUALITY OF BEESWAX

By E. L. SECHRIST,

Tahiti.



The wax press is a good tool, properly used, to get all the wax from comb.

BEESWAX, as pure as it is in the wax pockets of the bees, is all but unknown commercially. As produced and built into virgin comb by the bees, it is of a snowy whiteness and contains no resinous material.

As soon, however, as the bees begin to use the comb, they varnish it over with an extremely thin coating of propolis, as they do all interior surfaces of the hive. That is the reason why all crude beeswax, as produced for sale by the beekeeper, necessarily contains a small quantity of resin from propolis.

The nearest approach to propolis-free beeswax that the beekeeper produces is the wax rendered from cappings from new combs and from virgin combs which have not been in the hive long enough to become well varnished. It is not practicable, commercially, to produce beeswax as free from propolis as this. Working as carefully as one can, within reason, the beeswax produced will contain a small percentage of the more soluble resins of propolis. **Much crude beeswax contains up to 3% of resin from this source, and Bisson and Vansell, working in Davis,** while I was in the Pacific Coast Bee Culture Laboratory there, **found as much as 16% of propolis in a sample of beeswax rendered from scrapings from comb honey sections and supers.**

Effect of Propolis in Beeswax

Much propolis in beeswax not alone gives it more or less color, but lowers its melting point, thus rendering it always sticky to the touch at room temperatures. It causes comb foundation to sag badly; causes floor polishes to be sticky and is objectionable in dental wax. Particularly in candles is it harmful, because, when heated, it gives a char residue which does not burn but clings to the candle wick, causes smoking and prevents the candle burning freely.

The selling price of beeswax is lowered because it is contaminated with propolis. This is a direct loss to beekeepers, who, however, seldom realize that not keeping propolis cut out of beeswax lowers its quality. **Bisson and Vansell have said: "Rigid exclusion of propolis from the crude wax in the apiaries should be encouraged, since producers must pay for losses in both processing and manufacturing by receiving a lower price for their crude wax."**

How to Avoid Excess Propolis in Beeswax

The propolis resin legitimately present in carefully produced beewax is negligible for most commercial purposes but that which the beekeeper unconsciously or unthinkingly adds is often so great as to cause serious trouble.

Some, but not all, of the excess propolis can be removed by refining. Comb foundation, which is made from crude wax considerably refined, has been found to contain up to 1% of propolis resin. Therefore, in spite of all the refining that is commercially practicable, comb foundation, even when reenforced by wiring, will sag to some extent, while comb as built by the bees without foundation sags but little.

If the propolis from an ordinary frame is scraped off and melted with the comb cut from the frame, the resultant wax will contain about 4% of propolis, which is more than enough to spoil it for comb foundation and many other purposes. It is, therefore, of the utmost importance that the beekeeper, when cutting out old combs, should melt separately the old scrapings from the frames, supers, and sections. The quality of beeswax is also lowered if combs with the propolis on them, are melted out of frames by steam. Low-grade wax which may contain, in extreme cases, as much as 16% of propolis, has a certain value in compounds, such as salves and pastes, where stickiness and a low melting point may even be an advantage; but

Beeswax may vary in price but it is a good medium of exchange and often serves as money. This lot of caked wax is equal in value to many a man's yearly income.

Caucasians are great propolizers. Some Italians are more so than others. The two races, mixed, retain the dark race's gummy habit. This entrance is about closed by propolis.

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it should never be mixed with high grade wax.

Color of Beeswax

At least two natural causes, which are not wholly avoidable, and one man-made cause contribute to the color of beeswax.

As has already been said, pure beeswax is white. Propolis added by the bees as a varnish to the comb has long been recognized as one source of color. The second color source, pollen has, until recently, been given less consideration although some of the work done indicated that, through propolis, it was a source of color.

Vansell and Bisson, in an important piece of research work reported in the Journal of Economic Entomology, December 1935, p. 1001 clearly show that the hues of crude beeswax, excluding the metal stains, originate, for the most part, from pollens. Wax produced by sugar-fed bees, confined in the laboratory, or from dark honey, was white. Some pollens, although bright in color, apparently are not soluble in oil or water, and do not affect the color of wax, while the pollens from deciduous fruits, dandelions and many other flowers, join in giving most western beeswax its characteristic yellow color. Much beeswax produced in some parts of the world is practically white and also contains but little propolis. Evidently, the pollens which give most United States beeswax its yellow color are not present in such places.

Beeswax, even in the solid state, usually absorbs pollen pigments, and at temperatures above the melting point of wax this absorption proceeds rapidly. Hence, in melting up combs for wax the soluble colors in the contained pollens are quickly absorbed by the hot wax.

Metal Stains in Beeswax

Although a few beekeepers have known, for many years, that much perfectly good beeswax is reduced to a low grade by acquiring a gray color from contact with the iron used in melting vats, most beekeepers seem to know nothing about it. Therefore, manufacturers have continued to make, and beekeepers to use wax presses and melting vats which should be discarded or which should never have been used at all.

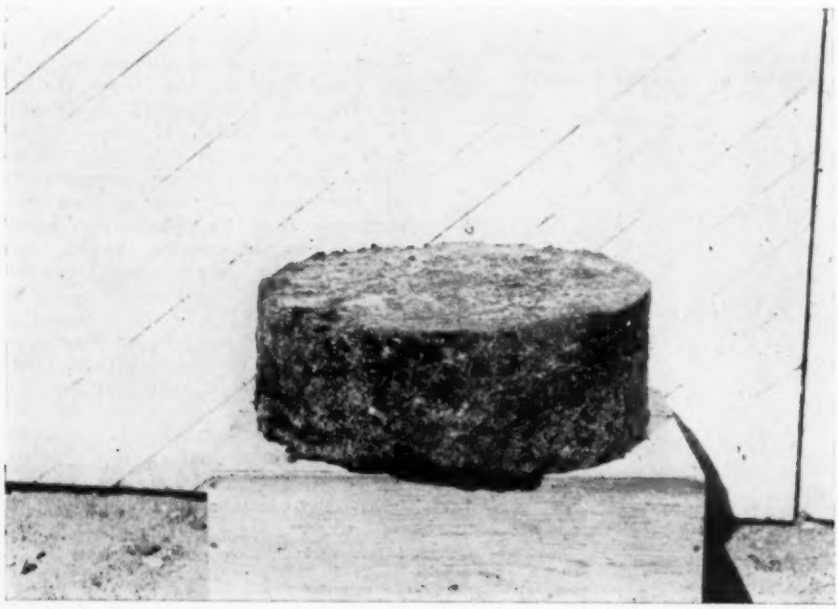
To find out the facts and to have something definite on the subject, we began, at Davis, in connection with other wax studies by Bisson and Vansell, a study of the effects of the acids in beeswax on various substances. **In the following list, the least affected substances stand first: Glass, platinum, aluminum, nickel, some stainless steels, enamel ware, zinc, lead, Monel metal, copper, brass, iron. With zinc and lead, white insoluble precipitates are formed; with iron, brown wax-soluble substances. Crude beeswax acted on iron much faster than either refined wax or wax made by bees from sugar syrup. Much of this action appears to be due to the propolis in the wax.**

Beekeepers should, therefore, avoid getting propolis into the wax they produce. Nickel, aluminum and "some stainless steels" are the most promising metals for making wax rendering equipment. Tin, it will be noted, is much better than zinc, and it does not wear off as quickly as zinc, therefore **tin-coated copper or iron is much better than galvanized iron, which should never be used for any melting vats or equipment used in rendering beeswax because the zinc coating is quickly dissolved by the acids present in the wax and then the bare iron is exposed and the wax is discolored.** As long as the zinc remains on the galvanized iron, no particular discoloration is noticed because the zinc is changed to an insoluable white precipitate but, as soon as the iron is exposed, the wax in contact with it takes on a gray shade. Particularly is this discoloration serious where the wax and water is boiled for some time in a galvanized iron tank. Even in a small, cylindrical wax press, the outside cylinder should be made of tinned iron although, in a press through which the wax passes quickly, discoloration is not so great as where the wax is boiled in the iron vessel.

Rendering Wax Without Discoloration

I have seen wax of fairly good yellow color produced when using the common square type of galvanized iron melter and press providing the wax is boiled up in a wooden vat by steam, and then transferred to the iron tank merely for pressing, using, at the same time, sufficient hot water to dilute the wax acids and thus avoid rapid action on the iron of the press. However, for safety, it is better never to use galvanized iron.

If nickel, aluminum, or stainless steel is found too expensive, or is not obtainable, a square wax press made of wood, one style of which I have



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Cappings pressed into a cake for rendering. Often there is much honey still retained. Such material is the source of the best wax.

described in the A. B. J. of December 1937, p. 567, or long wooden vat may be used in which two or three press screws may be installed with a separate follower board and burlap sack or cloth used for each press screw. A long, hot cheese of slumgum is more difficult to handle than two or three square ones. Then, by melting the combs with plenty of water in a wooden tank of the requisite size, or a barrel, placed higher than the wax press, the melted mass can be dipped out quickly, with plenty of hot water, and rapid work can be done.

One of the most important factors in rapid rendering of wax, and in producing wax of good quality and color, is to use an abundance of hot water, which is easy if a steam supply is available, and to separate the wax from the slumgum quickly. Indeed, for rendering wax on a large scale an abundant supply of steam and hot water is essential. If hard water must be used, it is advised to add about a tablespoon of vinegar to each gallon of water.

When burlap sacks are placed in the press and the melted mass poured into them, most of the hot water and wax runs through at once. The sacks should be filled about one-third full of solid material, then folded over and pressed, loosening the screw from time to time, pouring more hot water over the cheese and pressing again until very little wax remains in the slumgum. If cheeses are made too thick, not all of the wax can be pressed out, and if the slumgum solidifies in a hard mass on cooling, it contains enough wax to make reprocessing, with a good outfit, profitable.

While most of the wax may be obtained without a press (except from very old brood combs), merely by boiling and dipping off the wax or by allowing it to run out of the bottom of the vat and through a strainer, with plenty of hot water, yet sufficient wax will remain in the slumgum to warrant the use of a press.

In any sort of press, no black or galvanized iron or wire cloth should come into contact with the wax. The press screw and the iron plate or spider beneath it should be raised high enough by wooden blocks so that no iron is submerged in the hot water or wax. All parts of presses or vats which come in contact with wax should be of wood, nickel, aluminum, or stainless steel.

Rendering Wax from Large Quantities of Drained, Pressed or Centrifuged Cappings

When cappings are allowed to accumulate to the end of the season before melting, rapid processing becomes important. For ease in handling, the dried cappings may be dumped into a chute or tank set in the floor of the extracting house and extending down into the wax room beneath. A steam coil, preferably of nickel or aluminum, with return, is sometimes placed in this chute. When it is desired to melt cappings, they are warmed and partially melted by the steam coil as they drop into the melting vat beneath, as shown in the drawing of a wax rendering room. Most of the honey the cappings may contain, after the first draining, drains out while they remain in the chute, before the time comes for melting the cappings. Only cappings and virgin comb should be put into the chute.

A large capping melter of tinned copper can be used as long as the tin covering remains on the copper. In one of the type having triangular melting tubes, I have seen the cappings from 1,000 supers melted in 12 hours.

It is always safe, however, to melt them in a wooden tank, by the use of steam and hot water. As the tank becomes full, the wax with the slumgum which accumulates, is dipped off into a wax tank, which also contains some hot water. In the top of this wax tank should be fitted a slumgum basket of ⅛ inch mesh tinned hardware cloth, and the wax, as it is dipped off, should be poured through this. This tank should be about 30 inches tall and 16 inches or 20 inches in diameter or square. Near the top, it has an outlet for running clean wax off into molds. When this tank is nearly full, or whenever desired, more hot water is run into it through a pipe extending down into the tank to near its bottom. A steam inlet is used to boil the water and the wax is run off into molds by adding hot water to raise the level of the wax until it will run off through the wax outlet. In this way all the clean wax can be run off without dipping up any of the waste that may have gone through the strainer. When cleaning up, the slumgum basket is lifted out, allowed to drain, and emptied while hot. The water with the film of wax on it is allowed to remain in the wax tank until cool. Any wax remaining on the top can be remelted. There is a bottom outlet to this tank so that the water can be drained out completely. This outlet may be merely a tube or hole with a cork to close it.

(Concluded in April number)

OPEN AIR OBSERVATION COMBS

By WALTER H. HULL,

Virginia.

TO those who find the glass hive not entirely adequate for studying the activity of bees, or who wish a more direct contact with them, the following plan, given by Purchas, may be of interest; "Let the board or plank whereon the bee-hive stands have a small hole or cleft through the middle of it (big enough for a bee to go through) or let the hive stand a little over the board or stool, and when the hive is full you shall ordinarily have them work combs to the bottom of the board under the hive; I have had under one hive six or seven combs a foot long a piece, wherein they bred their young, laid up their honey and bee-bread as in the hive . . ."

But he adds: "Although they were in the open air, yet was I thereby little the wiser; only sometimes in a colder season I have observed them blowing, and working of the lower part of their comb; but was not anything at all enabled to understand the generation of their young, or other curiosities which were performed within the inmost combs, they still, some of them encompassing their work."

Incidentally, this may be the first non-swarming plan on record; for the author adds the statement: "If they begin a Comb under the board it is a sure sign of not swarming."

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OLD FASHIONED HONEY CAKES

10 lb. brown sugar
10 lb. honey
2 lb. shortening
2 quarts milk
½ lb. cinnamon
½ lb. anise seed
3 oz. ammonium bicarbonate
4 egg yolks
1 pint egg yolk
2 oz. baking powder
26 lb. flour (half bread and half pastry)

Bring to a good boil, honey and sugar. Strain into a bowl and add shortening, milk, cinnamon and anise seed; then allow it to cool. Add ammonia mixed into 4 egg yolk. Add 1 pt. egg yolk and the baking powder. Stir up well, then add the flour and mix clear. Let dough stand at least 24 hours, then work up into any desired shapes.

THE EFFECT OF HEAT AND MOISTURE ON THE PRODUCTION OF NECTAR AND SEED OF WHITE SWEET CLOVER IN MANITOBA

By N. PANKIW,

Manitoba.

A field of Melana sweet clover in Saskatchewan. Much experiment lies ahead in new clovers. Will the old wait for the better to come?

A disease resistant variety of biennial sweet clover. Root rot is now raising question about sweet clover's permanence.

IT is not always possible to produce a big crop of honey in Manitoba during a dry summer like the one we had last year. In the southeast part of the province, we had very little rainfall last June and it was so dry in July, that on the 19th the honeyflow stopped completely. From that date, very little, if any, honey was brought in except at the home apiary, where the honeyflow continued till late fall.

It was a real puzzle. In outapiaries that are located several miles from home, the bees were consuming stores and the foundation given them was not built up at all. Every time visiting outapiaries, we found that our expectation for a big crop of honey was less and less and finally we secured the poorest crop since we kept bees. The average crop production in this part of the province was from 50 pounds to 80 pounds for spring packages, and overwintered colonies yielded from 70 pounds to 100 pounds. Quite a number of beekeepers secured no surplus honey and the high producing area of Otterburne and St. Pierre averaged only about 80 pounds and less.

Upon visiting clover fields, one could notice that most of the field pastures were dried up. The ground cracked wide and deep. On the whole the ground was dry six feet deep and more. No rain of any importance since last June and the outlook for this year's crop looks very serious. If we are not blessed with heavy rain this spring, our 1940 crop will be smaller or no crop at all.

I was determined to find out what was the cause of the honeyflow at the home apiary. The bees continuously brought honey in and our colonies gained in weight, storing up the surplus after July 19. The foundation given them on the 29th of July was drawn up and filled nicely with honey. No robbing could be noticed, while in the outapiaries the bees robbed badly and were crosser than ever before. No one could pass without a veil while the bees at home were quiet and busy coming from the field heavily loaded. Visiting the forty acre sweet clover field, one could see the bees were working on sweet clover, day after day. This field of clover was disked last spring after the sweet clover grew a few inches high, in order to kill the mustard which had already begun to grow. As the top soil was loosened up, all the moisture there was retained and the clover was growing high in spite of dry weather. No cracks or openings could be noticed. This field was left for seed and the average yield of seed per acre was 400 pounds of No. 1 seed, while the average yield of seed on fields not disked was 150-200 pounds. Many fields averaged even less.

Besides the above mentioned forty acre field, a neighbor, half a mile distant, had a sixty acre field of clover, the first crop of which was cut for hay and the field disked as soon as the clover was put in stacks. Shortly after, the clover began to bloom and the bees were gathering nectar until it was finally cut for hay in the late fall.

The home apiary consisted of spring packages and wintered colonies. Half of the colonies were Italian and the other half Caucasian. All averaged over 150 pounds of surplus honey and enough honey was left in hives to provide them until the new honeyflow.

From the above observations, it is self-evident that cultivation of clover fields as soon as the clover starts to grow, helps to preserve moisture in the soil during the summer. This, with heat, influences the secretion of nectar by plants during hot summer days and thus increases the production of good seed in adverse conditions.

THE FARRARS GO PLACES

By RUTH HODGSON,
Wisconsin.

All the world's a stage,
And all the men and women merely players,
They have their exits and their entrances,
And one man in his time plays many parts.
[As You Like It--Shakespeare.]

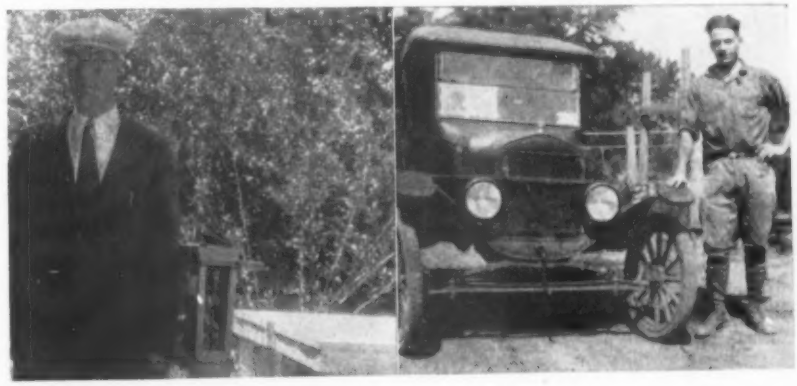
C. L. Farrar, right, is now with the U. S. Bee Culture Laboratory at Madison, Wisconsin. M. D. Farrar, left is research entomologist with the Illinois Natural History Survey at Urbana.

THE success of Milton and Clayton Farrar in the beekeeping and entomological world probably traces back to the interest aroused by single colonies of bees their father gave them in 1915. They took care of the bees and split the profits fifty-fifty. They saw in bees a chance to make money, so they bought a number of box hives from $1 to $3 each, and purchased modern equipment in which to transfer the bees.

In two years, they had thirty colonies in standard equipment. The Farrars and three other boys organized a bee club. They wanted to care for their bees properly, so they indulged in an extension course under the club leadership of Otis E. Hall, and a program arranged by Dr. J. H. Merrill, then at the Kansas State College. The club lasted about a year, but the Farrars kept their bees and continued to make them pay.

Milton went to Iowa State College in 1920. The bees paid his expenses the first year, but the second the crop was not so good and he had to do other work to make up the shortage. In the summer of 1923, because of weather, the crop was a complete failure and the Farrar boys had to buy 1200 pounds of sugar in order to winter their bees successfully.

That winter Milton worked in an office to continue college the succeeding fall. A year away from school would have discouraged anyone not so keenly interested in getting ahead in the field he loved. Office work was dull when his interest was centered in entomology. Nevertheless he appreciated college more because of his difficulty in securing the money to pay his way. He graduated in entomology and zoology in 1925.



At right, Milton is teaching bee culture at South Dakota Agricultural College. In 1925, Clayton (right) is burning gas to bee yards.

Clayton entered Kansas State College in 1922 and was student assistant to Dr. J. H. Merrill in his department of entomology, where his interest in apiculture as a commercial enterprise was further strengthened. He says of the three years he worked with Dr. Merrill: "These three years under his influence made the field of apiculture research a promising reality to me."

Milton worked in a commercial apiary in northern Iowa in 1923 and

Both boys were nurtured on a diet of honey and love for bees. Many a snake charmer would be green with envy over this picture.

both he and Clayton served as Kansas apiary inspector in 1924. They were able to apply what they had learned and to acquire practical experience to help them further. In 1925 Milton went to South Dakota as instructor in beekeeping and entomology for two years, and Clayton was in charge of the Kansas college apiary for the summer, following Dr. Merrill's resignation and until the appointment of Dr. R. L. Parker who is still there.

In 1926 Clayton worked with Dr. M. C. Tanquary in North Dakota, and in September went to Massachusetts State College as instructor in entomology and beekeeping. He received his doctor's degree in 1931.

When Clayton went to Massachusetts in 1926, he turned the bees over to his father. His father died in 1929 and Clayton decided to move the bees to Massachusetts where they could be cared for. They were trucked a distance of 1,725 miles, in three days and nine hours, which included a seventeen hour delay for a blizzard. The moving cost $365, $65 of which was a preparation charge for the moving by one of Dr. Parker's students. Scarcely a bee was lost and only one queen in fifty colonies. The bees were rented for orchard pollination for two years and then sold in 1930.

Milton returned to Ames in 1927 and received his doctor's degree in 1933.

Clayton in 1931 was employed at the Government Bee Culture Laboratory, working on photo electric apparatus for determining the flight activity of the bee. From there he went to the United States Intermountain Bee Culture Laboratory at Laramie for seven or eight years.

These two Farrar boys believe beekeeping could be made a profitable undertaking for young people of high school and college ages anywhere. The investment in money is not large. Clayton says, however, that "sufficient enthusiasm to learn the bee behavior is most necessary." Local marketing of their honey gives the young man fundamental business training to help him in later life. They advise beekeeping for young people because it offers so many different applications. If their interest in bees is permanent, they can go into other fields of beekeeping just as the Farrars have done.

If you had picked up a May 15, 1927 "Grand Rapids Herald" or a May 13, 1927 "Cairo Illinois Bulletin," you would have read in headlines: "Bees Pay College Boy's Costs" or "Two Brothers Go Through College by the Labor of the Bees." Several newspapers ran these stories. The brothers were Milton and Clayton Farrar. People are always interested in young men who strike out for themselves instead of relying on their parents for their education. These boys will later be men who do big things.

The Farrars have done big things. Clayton is now apiculturist in charge of the United States Bee Culture Laboratory at Madison, Wisconsin, and Milton is research entomologist in the Illinois Natural History Survey Division at Urbana, Illinois. Neither of them keep bees, as their work occupies all their time, but Clayton says, "M. D.'s work on insect control gives him only an occasional contact with bees but mine keeps me as close to the bees as though I owned a thousand colonies."

Clayton tops it all with this remark, "Few entering college know what work they will engage in on graduating. The person with a definite interest, nevertheless, is most likely to prepare himself for the opportunities which are sure to come to a man who is qualified."

—◆—

FUTURE OF PACKAGE BEES

By HY. W. SANDERS,

Manitoba.

THAT veteran beekeeper and writer, Allan Latham, puts the practice of killing bees in fall and replacing with package bees in spring in the same class with non-swarming hives, reversing hives, and other fads and folderols of the past. He does not prophesy that it will pass away as completely as those practices that form the subject of his interesting reminiscence; but he clearly doubts whether it has a future, observing that it depends on the ability of the southern shipper to furnish packages of young bees, unimpaired in vigor, with good queens.

I was one of the first to bring combless packages into this province, about 1920, and I have seen the imports grow year by year until now a large part of our apiaries are dependent on southern bees each spring. There is no sign of any setback and we have been getting better results year by year, more reliable bees and queens and faster service. There are some very convincing arguments in favor of replacing bees each spring.

One of these is disease control. Dead bees, like dead pirates, do not rob. The time when disease is spread is in fall and spring when there is a dearth of nectar and bees will scour the countryside for anything that smells like honey. If there is a dead or weakened colony within flight range, bees will come back with A. F. B. No matter how careful and strict we may be in our own yards, there is always this possibility of infection from outside. The inspectors do fine work and burn considerable disease each year, yet they have a vast area to cover and in spite of compulsory registration there is always the chance of an unregistered colony, or even a natural swarm dying and leaving a center of infection in our neighborhood. We therefore begin killing before the honeyflow ceases and try to get the job done before heavy robbing begins. When all the bees are dead, it is possible to make a much easier and closer scrutiny of the brood combs to catch the first cell in the event of infection, and this gives us a better control of disease.

Another advantage of killing bees is the work it saves. As soon as the flow is nearly over and we start around with the gas, all we have to do is to tear the hive apart and sort it up: ripe combs to the extracting house, unripe to a few finishers to be spared a little longer, feed combs to the warehouse ready for package next spring. There is no long job of packing, or carrying down cellar, no requeening, no spring task of getting them out again. We can pack all away and go south ourselves for a long vacation.

Then another great advantage of package bees is that we get young queens in spring. If all goes well these build up so fast on willows, fruit bloom, and dandelion that they are equal to wintered colonies by the time the main flow comes. Some claim that the wintered colonies come to full strength too early and are liable to pass their peak before the flow is fully developed, with consequent swarming and demoralization. At any rate the value of all young queens in spring is incontestable.

In regard to costs, if honey is not too high, the saving of winter stores is enough to pay for the package bees.

These reasons would seem convincing and conclusive that the package bees are here to stay, but there are arguments on the other side. Proponents of wintering point to the

great surplus of honey on our markets and urge that instead of being crowded on to a demoralized and congested market more honey be used to winter bees. They say that strong, overwintered colonies can be divided and each half provided with a young queen from the South, and that the two colonies thus provided will do as well as two packages at much less expense. They say that the remedy for disease conditions is closer inspection and watchfulness against robbing.

We have just spent a winter in the South and have seen something of the producing end of the package bee business. The shippers are doing a complicated and difficult job in a fine way. Yet they complain that the season tends to shorten and that all the northern men want their bees within a few days. It is difficult to get competent help in the quantity needed, and people with only a sketchy training must be put to perform operations where mistakes may be costly later. This is probably the underlying cause of queen supersedure. Weather is an unpredictable factor and a long wet spell across the South might play havoc with shipping schedules.

All of this leads to a conclusion that we ought not to neglect altogether the wintering of bees. The wise course for the future seems to be to study better wintering and to use the packages as replenishments of winter losses and for increase. Probably we shall be dependent indefinitely on the South for queens as our short season makes profitable production of them practically out of the question. However with a good supply of bees on hand, the northern honey producer could take queens at many times of year other than the short package season. If we continue to demand queens by the thousand all in a week or two, we are bound to get some inferior stock.

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BEE PASTURAGE AND FERTILITY

By LEONARD S. HARKER,

England.

BEEKEEPERS will remember the great hopes that have been entertained for the Zofka red clover as an important honey plant. The editorial in the American Bee Journal for June last tells of some interesting tests made on this plant at the Pellett Gardens, Iowa. The early results were most promising, although it was doubtful if the plant would stand up to the rigorous American winter. The past winter proved this to be the case.

It would appear that it is going to be a very difficult job to acclimatize Zofka clover to American conditions. Perhaps in the end it would be more satisfactory to concentrate on **Leguminosae** of American origin or adaptation than to worry too much about imported varieties, which fact would appear to be more in keeping with the tenets of biology.

No mention was made of the land is prepared from naturally made humus, preferably incorporated in the soil and preparation of the same for the test in question, but we all know that Frank Pellett is far too keen a botanist to neglect this important detail. For future tests on the Zofka clover, I would like to suggest that a plot of soil in the late summer and well before the seed is sown in the autumn.

It is important to distinguish between humus and farmyard manure. The latter is generally far too concentrated for direct application to the land. It is best applied as humus, in the form of one part manure to four parts made up of vegetable and garden wastes, wood ash, chalk and soil, made into compost, which takes about three months to rot down into something like leaf mould. There is no need to incorporate chemicals if farmyard manure is used. If no manure is available, chemicals would be an advantage, although it should be remembered that no permanent and effective system of agriculture is possible without livestock.

Beekeepers have been so busy with the gadgets of the craft that they have lost sight of the fact that the soil is the raw material of both farming and honey production. Nature's wheel of life is one of growth and decay, both of which are integral to her activity. We have erred in paying far more attention to growth than to decay.

Humus has a direct bearing upon the quality and nutritive power of the crop by what is known as mycorrhizal association. The nearest parallel to this association is that furnished by the bacteria which live in the root nodules of **Leguminosae.**

The plant feeds in two ways: (1) by means of the carbohydrates and proteins synthesized in the green leaf by the energy of sunlight, and (2) by the direct digestion of fungus tissue in the cells of the active portion of the surface roots. Humus influences both leaf and the mycorrhizal association, and is therefore a complete and balanced plant food.

I am greatly indebted for the above remarks on humus to Sir Albert Howard, C. I. E., M. A., and to his pamphlet: "The Manufacture of Humus by the Indore Process", published by The Royal Society of Arts, John St., Adelphi, London, W C. 2. Price 1s. 6d.

[Since Mr. Harker had no information as to conditions on which our tests of Zofka red clover were made, it may be well to record some facts in connection with his article.

The soil on which the clover was planted was a rich glacial deposit abundantly supplied with humus. Tests for fertility showed that all essential elements were present in full requirement. It would be difficult to find a soil richer in natural fertility or one in better physical condition. The lack of sufficient rainfall and the open winter with frequent freezing and thawing apparently were responsible for the loss of the plants which winter killed.

Reports from other localities where small plots of the clover are under test indicate that it wintered successfully and that it may yet prove suited to American conditions. —F. C. P.]

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BANKERS IGNORANT ABOUT BEEKEEPING

Not a single banker in this county in Minnesota owns a colony of bees that I know of. It is impossible to talk to them about getting money for equipment. They seem to know nothing about beekeeping and seem not to be interested.

I had a crop of 1600 gallons of extracted clover and basswood, sweet clover and alfalfa honey in 1924. I took the banker to my apiary to see the crop and he said, "That's the most honey I ever saw." Yet, he was not interested. He thought I should have a life insurance policy. I know now, however, there is more in it for me to buy good bee equipment than there ever would be in buying a life insurance policy.

J. W. Fenske.
Minnesota.

Home, apiary, and self-serve honey stand of Iver C. Andersen, young, fair-haired honey producer of Lake Benton, Minnesota. Loss from thievery less than two per cent.

"HONEYTERIA--NEXT CORNER"

By RUTH ANDERSON,

Nebraska.

HOW to turn that hobby to some financial advantage! How to sell that honey for profit! Iver C. Andersen, tall, fair-haired young beekeeper, of Lake Benton, Minnesota, has solved the problem in a remunerative way. He also sells honey wholesale; but, in doing so, he has to give from 25 per cent to 33 per cent discount, as well as bear the expense of delivering it to the towns within a forty mile radius. Today, as the traveler approaches the junction of U. S. Highway No. 75 and a county road, he sees, 500 feet from the corner, a sign: "Honeyteria—Next Corner ." Just above these intriguing words is painted an old-fashioned skep, in and out of which are buzzing the proverbial ever-busy bees. On closer inspection there proves to be a hive directly behind the sign, the opening of which is just behind the opening in the painted skep.

Upon reaching the corner one sees a strongly supported, white box partially covered with vines and topped by two hives. (Mr. Andersen says the hives are another way of showing that the honey is made on the spot.) On the two shelves in the box is a neat display of 3 ten-pound pails, 3 five-pound pails, 3 two-pound jars, 3 one-pound jars, 6 one-half pound jars, and four sections. The price list:

8 oz. jar	$ .13
16 oz. jar	.20
Section	.20
2 lb. jar	.30
5 lb. pail	.65
10 lb. pail	1.20

If interested in larger quantities than those listed above, please call at house.

Near the neatly labeled, spotlessly clean jars, that may be used for other purposes when empty (they are the shape of a skep and have covers that screw on) is a small notebook and pencil with the invitation: Kindly register and we will send a souvenir later in the fall or winter." As well as being a good method of advertising, this is a means of determining local and out-of-state preferences, days on which losses occur, and also as a source of hints and suggestions which otherwise would be unavailable. This is Mr. Andersen's way of keeping in touch with his customers even though he does not see them.

Mr. Andersen is always careful to have a complete display, for he has learned that it will save him loss. For example, one day a man came along, and, seeing that one pound jars then sold at 25 cents, dropped a quarter in the crock, picked up the smallest package, which was a five-pound pail, and drove on. He had not gone far before he turned and came back. The five-pound pail had been the smallest package on the stand, as Mr. Andersen was out of the jar sizes.

Yes, it's true, there is no clerk of any kind; of course, Mr. Andersen goes to the stand every few hours, but the money is left in an open, earthen crock on the shelf. And, surprisingly enough, very few people drive off without making payment. To be specific, the loss last year was just a small fraction over 1.9 per cent and where could you find a clerk who would work for one per cent of his sales profit? Mr. Andersen says: "Yes, many people come back year after year. Some call at the house for larger quantities than they can get at the stands. The registration book shows that many people buy bigger packages on their succeeding visits to the stands. They seem to like what they get on their first trip and want more. Then there's the problem of not getting beat. Well, most people are honest; they like to be trusted. Of course, a few make mistakes. There was one case of loss about which I knew no details until a man drove into the yard one day and told me that his sons had taken a gallon of honey from the stand and had left what he knew was only half the correct price. This payment, the father explained, seemed to him to be too small and he wished to make up the difference."

The simple, well-built stands were constructed by Mr. Andersen himself. The box comprising the display room and shelves is 1½x2x3. That is, the front is 2x3 and from front to back is 1½ feet. The side and front walls are hinged at the bottom and are padlocked to the top at night. When they are lowered in the morning "Nature's Own Sweet," "Eat Thou Honey Because it is Good," and "Take the Honey Leave the Money," appear. Back in 1930 when he set up the stands, Mr. Andersen paid a professional sign painter $12.00, making the total initial cost of the two stands, four approach signs, paint hardware approximately $35.00. Of course you can cut down the cost considerably by doing your own sign painting, but in Mr. Andersen's opinion, first-class painting is essential.

HONEY CHOCOLATE CAKE DE LUXE

By CHARLOTTE MERRELL,

New York.

Charlotte Merrell is Mrs. Harold A. Merrell, of Wolcott, New York, and this cake with its frosting and its filling is her own original recipe. These kind of recipes being published after thorough tests from successful housewives should be distributed as widely as possible among those who are interested in fine foods. If you have similar recipes, let us hear from you.

We can certainly vouch for the excellence of Mrs. Merrell's honey chocolate cake. It is hard to keep around except under lock and key. She writes about it: "I am sending my original recipe for honey chocolate cake with orange filling and frosting. The recipe for the filling is one I modified to use honey rather than sugar. The recipe with sugar was a very old one of my mother's and a favorite in our family. As children, we were allowed to choose the kind of cake we liked best for our birthday. My sister invariably chose white cake with orange filling.

"In February 1938 I gave a honey cookery demonstration in the annual Farm and Home Week program at the New York State College of Home Economics. Among other foods I prepared this cake and my audience showed considerable interest in it. The combination of flavors is a little unusual, but most delicious. The demonstration samples disappeared like magic."

Honey Chocolate Cake

Fat ½ cup
Sugar ¾ cup
Honey ½ cup
Eggs 2
Chocolate 2½ sq. (2½ oz.)
Sour milk ¾ cup
General purpose flour 1 2/3 cup
Salt ½ tsp.
Soda 1 tsp.

Cream fat, add sugar gradually and cream it well. Blend in honey, then beaten eggs and melted chocolate. Sift and measure flour, add salt and soda and sift again. Add dry ingredients alternately with the sour milk which has been beaten until smooth. Bake in a moderate oven (375° F.) in two 9 inch greased layer tins or at 350° F. in a sponge cake pan.

Orange and Apple Filling

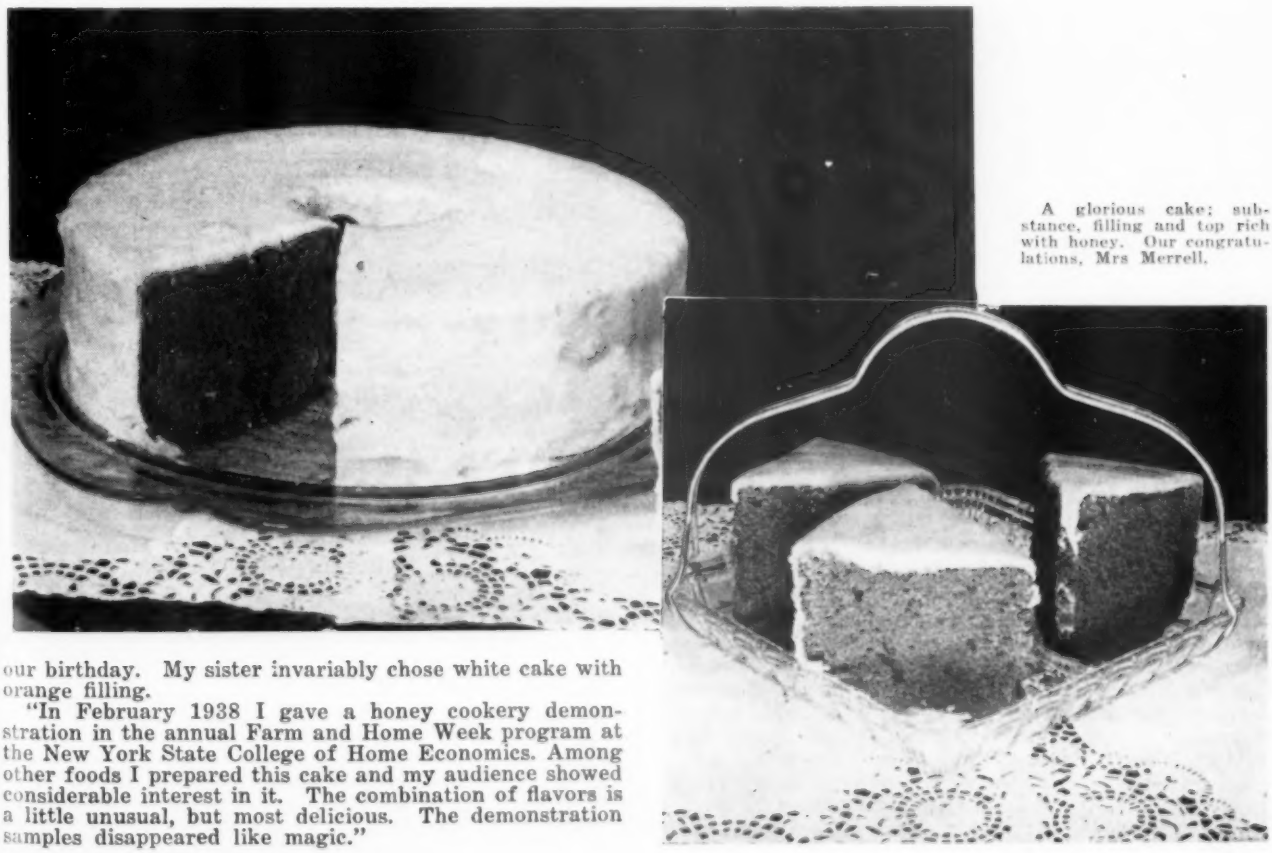
Grated apple 2/3 cup
Honey ½ cup
Orange juice 1/3 cup
Grated orange rind 1 or 2 tsp.
Cornstarch 1 Tblsp.
Egg 1
Salt, a few grains

Simmer five minutes over a low fire the grated apple, orange rind, and honey. Add the cornstarch which has been thoroughly blended with the orange juice and cook it over hot water, stirring frequently, until thickened and clear. Add to the slightly beaten egg and salt and cook a few minutes longer. Cool and spread between layers or split halves of sponge, plain or chocolate cake. Spread top and sides of cake with orange frosting.

Honey Orange Frosting

Butter 2 Tblsp.
Honey 2 Tblsp.
Orange juice 3 Tblsp.
Confectioners' sugar 2 cups (approx.)
Grated orange rind ½ tsp.

Melt butter and honey over hot water. Add orange juice and rind, then sifted confectioners' sugar to make correct consistency to spread.



A glorious cake; substance, filling and top rich with honey. Our congratulations, Mrs Merrell.

THIS AND THAT • • FROM HERE AND THERE

PACKAGE BEES VS. WINTERED OVER COLONIES

In comparing package bees and wintered over colonies of six years, I have found that the packages put up a bigger crop per colony than wintered over bees in most seasons. On two occasions, wintered over bees were exceedingly good. One colony which became strong early was given an extra hive body for brood and divided evenly on June 15. They harvested over 750 pounds from this division and did not swarm.

I have always packed my bees in leaves or straw out-of-doors in a sheltered spot. This does well some winters when it is mild and bees may take a cleansing flight when it moderates, but in cold winters it does not work as well.

When it is extremely cold for a long time, the cold penetrates into the hive body and nearly kills the bees before it moderates, especially a weaker colony. The inside of the hive is damp for days.

I packed fifty-four colonies one winter outside in leaves and fifty-two came through in good condition. I have a cellar over which I plan to erect a building and I will store bees in there with temperature never under 40 degrees. There I may get early brood rearing inside. I may also be able to check for brood disease before spring bloom.

J. W. Fenske,
Minnesota.

♦

HUNKS AND CHUNKS

Is there anything in a name? I think so. Names suggest beauty or ugliness in proportion as the names are homely or entrancing. A thing of natural beauty should never be forced to associate with anything but beauty.

Honey is certainly one of those things of superb natural beauty. It belongs with the roses, the many colored birds, the dewdrops and the rainbow. To bring it down to the level of the gutter is almost a sacrilege.

In the past few years there has appeared on the honey market a product labeled "Honey Hunks" and "Honey Chunks." Where do we go to find the language of "hunks" and "chunks"? Most certainly not in the circle of culture, refinement and the aesthetic things of life. Most certainly not in that circle of the beautiful to which honey belongs. We find these terms used around junk yards, crematories, joints and dumps. We expect to find these terms in the vocabularies of the coarse and vulgar. It is only the coarse, filthy, dirty, grimy things that come to us in "hunks" and "chunks." Flowers and poems and honey far transcend such labels.

Years ago, the beekeepers made a serious mistake when they fastened the word "extracted" to honey that had been removed from the comb. Why not avoid repeating that mistake now by eradicating "hunks" and "chunks" before they become established. In the old days we had the "butcher" with his "hunks" and "chunks" of meat. A progressive industry, responding to the changing culture, now gives us the meat cutter with cuts of meat. The meat isn't any better, nor will the honey be any sweeter under a new label; but whether it is a chunk of meat or a hunk of honey it reminds one of something just retrieved from a mudhole or cesspool.

Wilbur Sheron,
Indiana.

♦

WHEN IS THE BEST TIME TO INSTALL PACKAGE BEES IN NEW ENGLAND

The seasons vary so much that it is difficult to tell in advance just when the weather will be suitable for hiving package bees. Sometimes it is possible for the bees to gather pollen and some nectar from the soft maple during the middle of March. If combs of pollen and honey are available so that the bees are assured of a supply regardless of the weather it would be well to have the packages arrive early in March. However, as pollen is important in raising brood and combs of pollen are none too plentiful, I find that my best results are obtained from packages that arrive about April 10 to 15. A two-pound package of bees and queen arriving at this time and given plenty of sugar syrup, if honey is not available, will have several frames of brood by the time fruit trees are in bloom. Such packages take full advantage of the nectar and pollen from fruit bloom and build up for the clover flow and almost equal overwintered colonies in ability to store a surplus.

Packages hived May first are the easiest to install and maintain as they arrive when there is almost enough nectar to maintain themselves, and the weather is quite settled. However, there appears to be insufficient time for them to build up for the early clover, and very little surplus of clover honey may be expected. Three or four pound packages, however, forge ahead rapidly but do not appear to equal the two pound packages hived earlier. Packages hived around May 15 to May 25 arrive just too late for the fruit bloom, and build up on the clover. Such late packages will store some surplus from buckwheat and autumn flowers but as a general thing cannot be depended upon to pay for themselves the first season. For commercial purposes I would recommend receiving the packages just as early in the season as possible. Where there are strong colonies of bees to draw from, I like to give the packages one or more combs of sealed brood, and liberate the queen at once among the bees. I have never tried the loose queen package, but such a package would make hiving very simple and be of considerable value to hive on combs of brood and honey even earlier than where the queen is caged and must be released.

R. E. Newell,
Massachusetts.

♦

A SUGGESTION TO BREEDERS

We see much about bees superseding queens during fruit bloom or at the time of installation. We know, too, that bees at that time desire many eggs. A queen full of eggs is sooner accepted than one that has been starved in shipment to half her normal size.

Keeping a queen off combs is not serious, but withholding her food for unnatural food is serious. If she had natural food, honey and pollen, she would be fat and sassy and ready to lay.

If I were shipping, I would cage an equal number of young queens and have one feed of honey mixed with powdered sugar in one compartment and honey and bee bread in the other, so that they could eat either

one they wished. I think the bees would prefer the queens with that food over those provided only with the usual queen cage candy. Cage them yourself in this way two weeks and see what the results are.

Fred G. Poelle,
Washington.

♦

IMPORTANT NEW USE FOR BEESWAX IN THE LAUNDRY

Discovery by a Pacific Coast laundryman of the fact that use of clear beeswax in starch makes it possible to put a fine sheen on inexpensive shirts points the way to cultivation of a vast new wax market for beekeepers all over the United States. There are thousands of commercial laundries who could use beeswax to good advantage. And in addition, the vast number of housewives who do their own washing and ironing could doubtless be induced to use the product if it was put up in convenient form, with usage instructions attached.

Discoverer of the fact that beeswax is useful in laundering shirts is Jean Ticoulat, head of the New Process Laundry Company, Oakland, California. When Mr. Ticoulat took over the management of the New Process Laundry a number of years ago, he decided that the plant was doing too much unprofitable commercial work and too little profitable family business. Seeking a means of building up the family business, Mr. Ticoulat decided to concentrate on producing really superior shirt work. Having noticed that it was very difficult to put a nice sheen on inexpensive colored shirts, the Oakland operator started experimenting to find a way to correcting that condition. Beeswax having solved the problem for him, he began featuring shirt work in all his advertising and solicitations and as a result has increased his family business by nearly 300 per cent.

Formula for using the beeswax is extremely simple, according to Mr. Ticoulat. In twenty gallons of water he uses five pounds of starch and three ounces of clear beeswax. The wax can be used in any mixed starch but will not give proper results with straight corn starch. The shirts being treated with this mixture are starched in the wheel in the regular manner.

The addition of beeswax to the starch has not only resulted in production of a vastly improved piece of work but has also greatly speeded up operations in the plant. Since a good deal of handwork is done on shirts at the New Process as a means of producing superior quality, it was of utmost importance to provide a surface which the iron would slide over easily. By meeting that requirement, the company has speeded up average shirt production from eleven and one-half shirts per operator per hour to an average of fourteen. And in addition, claims on tears have been reduced by better than seventy per cent. Reason for the latter improvement is that the starched fabric is softened sufficiently, brittleness being eliminated. Of course the production gain is due to the fact that the hand-ironer does not have to go back over a surface a great many times, as the iron slides smoothly.

The fact that with the aid of this beeswax treatment the laundry is able to give inexpensive shirts of all types—particularly colored ones—a fine sheen, represents a real selling point. Laundrymen everywhere are agreed that the shirt is the key to the whole family bundle and that the company which can produce an extra high quality shirt at a reasonable price is certain of getting his share of the business. Experience at the New Process would definitely indicate the correctness of that theory.

Lucius S. Flint,
Colorado.

♦

SUCCESSFUL MANAGEMENT OF PACKAGE BEES

In hiving packages, my best success has been in having the hives ready with full sheets of foundation or drawn comb and an extra hive body without any frames on top. I loosen the feed cans and remove them, take out the queen cages, tear off the paper over the candy hole, push a match through the candy to break it through, put the cage on the frame screen down between two combs tightly fastened.

Remove the temporary cover from the feed can hole, turn the package hole down, set gently on top of the combs beside the upper empty hive body, put on the cover and leave them alone for three days. This work is done at night with a lantern.

Every package this way gets all its bees settled in their own hives and every colony gets an even start. If the work is done in the daytime, many bees fly about and settle unevenly. Some colonies are stronger than others, and it is unhandy all through the season unless they are equalized.

I have found that it takes from four to seven 10-frame hive bodies to a 3 pound package and a 10-frame brood chamber for each colony. The queen is confined to a single body with an excluder and often three or four combs of brood must be raised above to control swarming and avoid congestion below.

J. W. Fenske,
Minnesota.

♦

AN AMERICAN BEE PLANT

By C. W. WOOD,

Michigan.

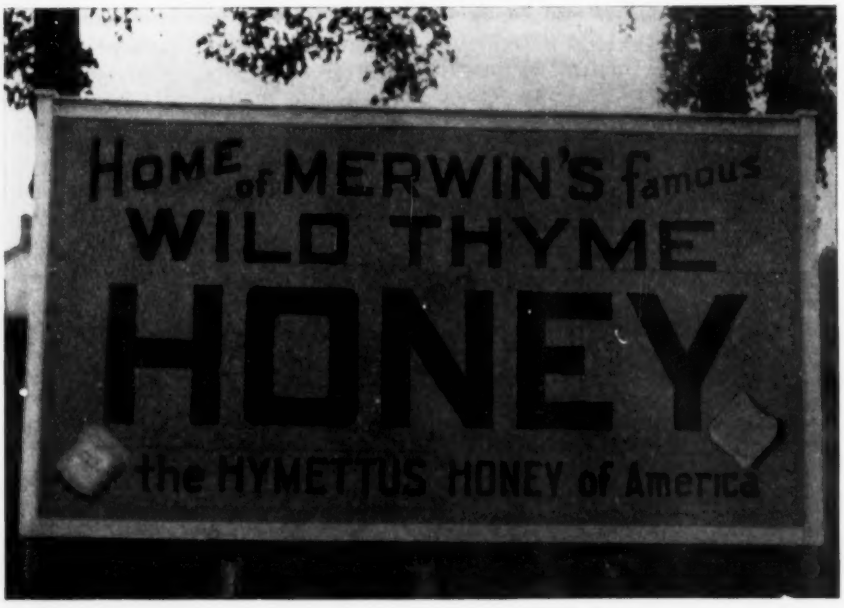
NEW uses for old plants are continually suggesting themselves to the observant gardener. This is particularly true of economic uses, such as human food and animal food. These observations are brought to mind by a recent (to me) development in the case of **Phacelia tanacitifolia**, the tansy-leaved phacelia of California. I knew the plant years ago as flower garden subject, but had not grown it for a long time until last year when it was used to occupy a spot left vacant when tulips went to sleep. The eagerness which bees showed for the flowers suggested to me that the plant might possess merit as bee pasture. Subsequent investigations developed the fact that this phacelia is a favorite honey plant in California, one writer recording the fact that it is regularly planted for bee pastures in Europe and Australia where it has been introduced. Professor Jepson also tells that "cows fed on it show a marked increase in yield of milk but will not eat it alone at first." All of which suggests another economic use to an erstwhile ornamental plant.

This phacelia is an annual, growing up to three feet high under good culture but more often about half that figure, with much divided, hairy leaves and blue to violet flowers in elongated spikes. It is said to inhabit dry, sunny soil in its native land and thrives under such conditions in eastern gardens. Even though it were desired, no phacelia of my acquaintance transplants readily except when very small. And it is not essential, for the seeds may be sown where the plants are wanted, a factor that makes it easy to handle where large quantities are needed. Seeds are not available in large amounts so far as I know but it would not be hard for a beekeeper to secure a few packets and save quantities of seed for subsequent sowing. The matter at least deserves consideration.

NOVA SCOTIA BOYS' AND GIRLS' CLUBS

These pictures are from H. G. Payne, provincial apiarist, Nova Scotia Department of Agriculture. He says: "During July each year, the Boys' and Girls' Clubs of Nova Scotia, under the supervision of Dr. W. V. Longley, director of extension service, go into camp at the Nova Scotia Agricultural College, at Truro, where, for a week, the work of their local club is supplemented by instruction in the various activities of general agriculture.

"This year a goodly number of these young people showed considerable interest in beekeeping, and a series of snapshots were taken during the activities in the apiary which are the results of the illustrations herewith."



A REAL HONEY SIGN

J. B. and C. J. Merwin, Prattsville, New York, have a real honey sign to advertise their unique honey produced from the wild thyme of the Catskill Mountains. There are two of those signs on the place, facing the highway both ways. They can be seen for a long distance.

The Merwins are situated in a part of the Catskills where wild thyme early became distributed probably with importations of sheep from Europe. It has since spread over a limited area in their vicinity. The honey is of pinkish color, of delightful flavor, and can be distributed as a specialized product.

Those situated where they obtain honey of a unique quality not to be found generally are really in a superior position when it comes to marketing their product.

A SILENT GUARD

Less than a quarter of a mile from the location shown in the picture, ten colonies of bees were destroyed with sulphur in an attempted robbery. The nice combs of honey would not have been recovered had it not been for the reward card. Such constant protection backed by the State Association is worth more than a big dinner once or twice a year.

Walter J. Tietjen,
Florida.

♦

DON'T FOOL WITH FOULBROOD--BURN IT

In September A. B. J., Mr. R. Selwyn Wilson states that removing a diseased comb (A. F. B.) oftentimes will result in a cure. Mr. Wilson is mistaken. For every cell showing a dead larva there may be and usually are hundreds of infected cells not showing but which will develop later when conditions are favorable for such development. It sometimes happens that where there is only a light infection, the disease apparently disappears due to the larvae being fed fresh nectar, only to show up later during a dearth.

Neither is there any real evidence to prove that any kind of hybrids will overcome genuine A. F. B. after infection. If any bees are immune to American foulbrood they are those that do not acquire the disease in the first place. My advice after many years of experience and observation is, **don't fool with foulbrood. BURN IT.** Do it as soon as discovered and don't wait until infection is carried to other colonies, either your own or your neighbors.

E. S. Miller,
Indiana.

THE BOYS TAKE OVER

Pete and James Howard, sons of Mr. and Mrs. Harvey Howard, of Huntington, Utah, are at least in these pictures, taking over the beekeeping for their grandfather, R. A. Howard, one of the leading beekeepers in Emery County. Mr. Howard's exhibits took first and second prizes at the Utah State Fair in 1937 and at earlier dates took first place at two World's Fairs.

Here Pete is pumping the smoker and James is apparently getting ready for action. R. A. Howard and his son, Harvey, have one of the most successful honey producing enterprises in Utah. With them is William Douglas, the three comprising the Howard Honey Company. It looks as though there would be two generations to make their dreams come true.

Lamont Johnson,
Utah.

♦

GIRL SCOUTS ON A VISIT

Here is a troop of girl scouts of State College, Pennsylvania, visiting my apiaries in June. They were shown the bees both within the hive and without. They were much interested, particularly in how the queen lays and the appearance of the brood. None of them seemed afraid. They will return again.

A. R. Houser, Pennsylvania.

All Around the Bee Yard

WHEREVER you go, the price for honey is still a topic of conversation. In fact it is an obsession with some. Honey in glass and tin on many markets is offered at a ridiculously low price and yet when a beekeeper who finds it hard to sell bulk honey for any more than 4 to 5 cents at his honey house or delivered, turns to packing, naturally any price which will increase the bulk sale looks attractive. So many a 5 pound bucket finds its way to the store to retail for 35 cents.

Yet with the tin costing 5 to 6 cents, and the storekeeper getting the honey for 30 cents, the beekeeper makes practically nothing over a carlot sale. Yet for some reason or other, he persuades himself that this is the path he should follow.

♦

A standard price of 50 cents or more for the 5 pound pail, $1.00 or more for the 10 pound pail, and 20 to 25 cents for the pound jar would make an industry with dignity and attractiveness. There should be some way for all those interested in the distribution of honey to get together on this proposition.

♦

I am persuaded, however, that the question of price whether for honey or bees, for queens, or anything else necessary in our industry, should not be based on the unit cost, but on **service and quality whatever the price may be.**

In the case of honey, it is brought to the surface by an experience of our own in which a honey considerable above the average taste value, sells readily at a higher price than any prevailing on the same market. Lower priced honey in almost identical containers does not move in comparison. After all, quality is made up of a number of things and price is certainly not the most important.

♦

WINTER is about over as this is being written (February 12). Of course those who are farther north will disagree, although a letter from our northern locations indicates a relatively mild winter for the bees.

Here the bees show considerable dysentery and will, no doubt, shrink in numbers rapidly because of it as spring advances. Early brood rearing will remedy this situation, but if the weather from now on is not satisfactory, many bees now in the hives will not be there later. Winter loss cannot be measured by the first flights of early spring. They only become fully apparent after the establishment of steady brood rearing in the colonies. February losses, may be increased at least twice by April 1.

It looks as though the worst result of this winter will be shortage of stores and possible early spring starvation. Also colonies which were not well supplied with pollen last fall, will not be in a position to begin late winter and early spring brood rearing, as they should, to replace population losses before they become serious.

♦

THIS value of pollen, which was under our eyes from the beginning of things, has not been understood until the late work of such men as Dr. Farrar in Wisconsin has brought its importance to light. It is interesting to hear those who now talk about wintering advising that colonies should not only have an abundance of honey, but should at least have six or more combs of pollen in reserve in the hive. The question of how to get it there is another matter.

♦

THIS whole problem of stock improvement is very interesting to me because, as I go along from year to year, it is more certain that the total crop of honey depends on an even and high production for all colonies. Severe variations are not good. Low production is decidedly unprofitable. So a stock that will repeat its heavy producing ability in every colony in the yard is a stock to seek.

That all stock from whatever source varies in this respect is evident to any who have studied it. This discussion of variation of stock among breeders is interesting and indicates a wide-awake interest on their part. I have in mind two lots of package bees. One averaged 126 pounds per colony. They were established on the same day as another lot which averaged over 200 pounds per colony. Why?

♦

THE coming of spring brings to many minds the question of whether or not to get more bees, to have less bees, or to do with the number they now have. Most everybody, unconsciously or deliberately, increases the number of bees from year to year. Only unforseen disaster such as disease, flood, fire or a major loss of like nature, puts the beekeeper permanently out of business or reduces him to insignificance.

♦

ONE of our friends from Minnesota, who usually visits here each year, reports the ownership of 700 colonies. A year later he had 1000, the following year he admitted 1200 and when asked where he would stop, he figured he had enough. Nevertheless after two more years he had gone to 1800. So it goes!

♦

THERE are two classes of beekeepers today making some profit; those who have only as many bees as they can take care of themselves, and those who have from 1000, 2000 or more colonies with hired help and a large overhead. Perhaps the former class are the ones of which to be envious.

♦

AFTER all, a large scale commercial honey production may be attributed mainly to the distribution of sweet clover. If anything happens to sweet clover, where will we be? Already the appearance of clover root rot in midwestern states has caused beekeepers to shudder. Unless a well concerted attempt is made to find valuable plants which appeal to farmers and are also major honey plants, we may some day wake up to find our investment no longer of much value.

♦

IT looks as though the annual trek of beekeepers north and south is slowing down. As far as I am concerned, moving bees from one place to another in large amounts and over long distances, makes such an unpleasant occupation of honey production that I would soon find my interest waning and my mind searching for something else to do. Probably others have felt this same way too. Certainly the plan of migrating from crop to crop is losing in favor among many who have tried it. I think likely even the beekeeper of the West who has made a habit of this sort of thing would gladly give it up for one of those 200 pound locations.

♦

AND the story of 200 pounds or more from a single colony in a year really is an unfair picture of American beekeeping. The locations which will do this are relatively few. If all the commercial honey producers were to confine themselves to such places, crops of 200 pounds would no longer be reported because overstocking would prevent. A 100 pound average from each colony each year is a fairer estimate of the prevailing commercial location.

Institute News Notes

"HONEY-for-Breakfast," will be the slogan of a campaign sponsored by American Honey Institute for the week beginning Easter Sunday morning, the earliest Easter in 27 years.

Start the day right by serving honey in one or more of the following ways:

On grapefruit or in baked apples.

Serve honey on cereals. It is delicious and may be diluted with water if you lesire.

Honey on bread and butter—on waffles or griddle cakes.

Surprise the children by sweetening cocoa with honey.

Will you help us make the campaign a success? You can do this by giving the above releases to your local papers. (2) by seeing that the stores are well stocked with honey (3) by ordering window streamers to use freely in stores and window displays.

Two attractive window streamers are available at $1.00 per hundred in lots of 100 or more; 25c per dozen for smaller lots. The latest streamers feature both comb and extracted honey for breakfast.

Hints for Heavier Honey Sales

1. Stores should be well stocked with honey. A mass display has a psychological effect on the consumer. Regardless of the product, whether it be oranges, ham, coffee or honey, a meager supply has an ill effect on trade.

2. Pails and jars should be free from dust and have that "just arrived" look. An electric light behind a display of honey in glass does wonders for it.

3. Various sizes of containers should be offered—sizes suitable for the tea room, the family, and the individual.

4. A prominent place in the store should be selected for display.

5. How would a circular, graduated rack with ten-pound pails on low shelf, five-pound pails on the next, and smaller containers on the next be?

6. Make liberal use of streamers mentioning honey.

7. A recipe leaflet should be given with each purchase.

8. Display honey on the meat counter. Clerks can frequently make the suggestion of hot cakes, honey, bacon or sausages. Heat honey if you desire. Some people add a little lemon or orange juice to it.

9. Display honey with cereals. Here, too, clerks can say, "Have you every tried honey on your cereals? It is delicious as well as healthful. You can dilute it and make it go further."

10. Display honey with citrus fruit. It is delicious on fruit.

11. Why not have a background of foliage and flowers for your honey displays? Certainly for an observation hive the setting should be in flowers.

12. Honey in gift packages. Would not three or four or six jars of honey in a gold paper lined box appeal to the most fastidious? If you use colored cellophane on packages, cut a cardboard a little larger than the bottom of your container, set this container on cellophane, bring cellophane over top of container and tie with a different colored bow. Offer to deliver gift packages. Have a little card for customer to write his name on.

Have "100 Honey Helpings" imprinted with your ad on the back cover. Keep your name and honey ever before the public. "If you want to keep selling them, you must keep telling them."

If grocery stores could be reorganized into departments as breakfast stores, luncheon stores, and dinner stores, what a boon it would be to the housewife!

♦

Will you need extra copies of Institute Inklings, There are some articles in it that should be read by everyone.

♦

The annual report will be mailed to members.

♦

Beekeepers! When you send in your dues, will you please tell us about how much and the kind of honey you produce. This information will be used only by this office. The Institute is constantly receiving requests from buyers of honey asking for the name of someone who could supply them with a definite amount of honey.

♦

Honey was again featured on the Kate Smith radio program on January 26.

♦

The chemist of a large concern wrote last week to find out who could supply him with approximately 100 barrels a year of a good flavored honey.

♦

In the "Wake of the News" column in the Chicago Daily Tribune on February 7 it states that Boryl Taylor, athletic trainer at Iowa State, is experimenting with a new breakfast menu for swimmers on the day of the meets. Instead of cereals the cyclone paddlers get steak, baked potato, and honey.

♦

The Christian Science Monitor cooperated in the promotion of National Honey Week and will cooperate in the Honey-for-Breakfast campaign. Last October the matter was presented to their advertising representatives in more than 500 cities throughout the country.

♦

The January issue of Ohio Nurses Review contains an interesting article on "Honey—A Substitute for Sugar." Why not give this copy of Institute Inklings to a friend who would enjoy and profit by the article on infant feeding.

♦

The Cooperative Merchandiser, the official publication of Retail-Owned Grocers, has an excellent article entitled, "Busy Bees Buzz Cooperation." in the February number. The article will help boost honey sales. Every grocer should read the story.

♦

John A. Logan, president of the National Association of Food Chains, included in the Selected Agricultural Commodities Bulletin that goes to all chain stores the following:

"HONEY PROGRAM. 'Honey-for-Breakfast' will be the slogan of a campaign sponsored by American Honey Institute, for the week beginning Easter morning. This ties in with the food chain **merchandising week beginning Thursday, March 21.** The American Honey Institute, Commercial State Bank Building, Madison, Wisconsin, suggests that **honey combines well with citrus fruits and cereals, in sales promotion and on the breakfast table.**

THE EDITOR'S ANSWERS

MOVING HIVES A SHORT DISTANCE

We have bees to move a short distance—about 100 feet. How can this moving be done without loss of bees?
ILLINOIS.

Answer.—Move the hives about three feet each day in straight lines, sidewise, forward, or backward. Do not move them diagonally. If you must do it faster, we suggest that you move the entire yard at once and put two or three hives of empty combs back in the old location. What bees fly back will collect in these hives, and they may be added to weaker colonies at a later date, or they can be moved short distances each day, until they are brought up with the colonies that have been moved. You may, of course, unite the decoys with any of the colonies.

♦

COTTONSEED MEAL

Is cottonseed meal a good pollen substitute?
NEBRASKA.

Answer.—The bees will work on the cottonseed meal, and undoubtedly they get something out of it for brood rearing, though not nearly what they get from pollen. Investigations have shown that powdered milk is a good substitute and that a mixture of substitutes is probably better than any single one. As soon as pollen is available in the field, the bees will no longer be interested in anything else.

♦

OIL CLOTH OR INNER COVER

Why, in your book "Dadant System of Beekeeping", do you praise the use of an oil cloth as superior to a honey board and yet honey boards are usually supplied with the Modified Dadant hive?
VIRGINIA.

Answer.—We do find that the oil cloth, as far as we are concerned, is more easy to handle than an inner cover or honey board. The oil cloth may be pulled back from the top of the hive for examination with little disturbance to the bees and it only requires opening as much of the top as is needed for the purpose in hand. With the honey board, however, the entire top of the hive must be bared with considerable more disturbance than when an oil cloth is used.

However, the bees do damage the oil cloth gradually until a new one has to be put in its place. This eventually makes them more expensive than the honey board. The honey board also serves as a cover for the hive body or super and may, in addition, be used as an escape board. For this reason, it is usually furnished with hives instead of with an oil cloth. The use of the oil cloth is optional. Oil cloth may be obtained from wholesale stores at varying prices.

HEAVY FLIGHT LOSSES

On a sunny, breezy day, when the temperature was about 32 degrees, one of my colonies lost about a quart of bees. These did not get back in the hive and died on the snow. The colony was very strong in October. Is it usual for strong colonies to lose many bees in mid-winter?

Answer.—It is not out of the ordinary for a colony which is unusually strong to have losses of bees when a warm flight day comes during the winter. Because of the number of bees inside, the hive becomes so warm, on such a day, that more bees fly out than would otherwise from a colony of normal strength. Therefore, it might be desirable to place a shade board over the entrance, which would have the effect of cutting down the amount of heat striking the face of the hive and the temperature generated within the colony.

♦

MELANA SEED

I should greatly appreciate it if you could put me in touch with someone who sells Melana sweet clover seed.
ILLINOIS.

Answer.—Melana sweet clover is a new crop which originated at the Forage Crop Laboratory at Saskatoon, Saskatchewan. We have had it under test in our honey plants test plots for the past two years, and it is a wonderful honey plant. The stems are about the same size as those of alfalfa and the plant is branched in much the same way. The only source of supply of seed that we know of is in Canada where the plant originated. You might write to Mr. W. J. White, Forage Crops Laboratory, Saskatoon, Saskatchewan, and inquire of him where the seed can be obtained.

♦

POLLINATING STRAWBERRIES

Will the bees of a large number of colonies at the edge of a strawberry patch interfere with the set and development of the fruit? My neighbor associates his poorly developed fruit with the presence of large number of my bees.
MINNESOTA.

Answer.—The presence of bees in the vicinity of a strawberry patch cannot in any case prevent the proper development of the fruit, but on the contrary, the presence of the insects serves to insure better pollination. Poorly developed berries are usually the result either of poor pollination or frost or dry weather. It has been proved over and over again that the honeybees greatly increase the set of most fruits, and some kinds are dependent almost entirely on the honeybees for pollination.

♦

MAKING INCREASE

I have only a few bees and quite a number of empty hives to be filled. I wish I could do it without buying package bees. I would like to know the best way to do this.
NEBRASKA.

Answer.—The best way is still to purchase package bees. They are free from disease, easily handled and usually safe to buy. They should be ordered to reach you in Nebraska about the 25th of April during dandelion bloom. Established at this time, they build up rapdily. If you have healthy colonies on hand after the packages are established and the queens are laying, give one comb of emerging bees and brood from the healthy bees to each of the packages about two weeks after installation. This takes up the drift which the package undergoes in the loss of adult bees before new brood emerges.

Such packages properly fed will do almost as well as winterd over colonies. It is best to hive the packages on drawn comb with pollen if possible. Pollen is more important than honey because the bees may be fed a syrup if they are short of honey stores. However, it is difficult to make up for the lack of pollen.

♦

DYSENTERY

I packed my bees for winter, fed them syrup in November, and now the entrance in front of one is flecked with brown spots, some bee grubs and frass. Does that indicate dysentery? Shall I investigate or leave them alone?
MISSOURI.

Answer.—It has been a hard winter on bees. They have been shut up since Christmas without a chance for flight and would be apt to show dysentery Fall stores might not have been as good as they should be. However, as there are only a small number of bees dead, you do not have much worry, and I would not advise you to look at them now unless you want to peek in to see whether or not there are plenty of stores sealed at the top of the frames. Otherwise wait until the first good flight of spring; then examine. If they do not have enough food, give them syrup at that time.

♦

COMBS CONTAINING DEAD BEES

Some miscreant stole all of the combs out of the food chambers on my beehives, and all of the bees have died of starvation. Several of the brood combs, which are otherwise in good condition, have dead or partially decayed bees in a large number of the cells. These will not shake out without breaking the comb and the combs are scarcely worth the bother of picking the bees out with tweezers. If I give these combs to populous colonies later in the year would they clean them out, or are such combs good for nothing more than the wax which can be obtained from them?
RHODE ISLAND.

Answer.—Shake as many bees as you can from the combs and give them either to package bees or to strong colonies. The bees will do a much better job than you ever could with a pair of tweezers. The combs will become perfectly clean and will be readily used by the bees. They are an asset to you—if they are good combs—far beyond their value as wax.

Should you not have occasion to use them for some time, store them in a dry place, where there will be no danger of moulding, and so that the bees in the cells will dry up rather than decay.

MEETINGS AND EVENTS

Beekeepers' Conference, Michigan, March 5-8

A conference will be at Michigan State College, East Lansing, Room 204, Horticultural Building, Fee $1.00. It will cover apiary management, extracted and comb honey production, wintering, handling and care of package bees, preparation of honey for sale, inspection and grading, honey houses and equipment, pollination, the care of beeswax, disease and its control. Faculty members: R. H. Kelty, J. C. Kremer, Floyd Markham, Dr. Potter, Elmer Carroll, Maynard Beck, Gordon Dillon, Don Barrett.

♦

Request Appropriation

A copy of the resolution passed at the Vicksburg meeting of the Southern States Beekeepers Federation, asking the Secretary of Agriculture for $45,000 for bee culture investigation was filed by Mr. Dowling with the Secretary of Agriculture. Also, a copy was filed with the Bureau of Entomology and Plant Quarantine, Washington, D. C.

H. S. Foster,
Secretary.

♦

Middlesex County (Massachusetts), March 30

The Middlesex County Beekeepers Association will meet at 19 Everett Street, Concord, at 7 P. M., on Saturday, March 30. R. E. Newell, of Framingham Centre, will speak on "Spring Management." Mrs. Albert Lund, of Waltham, will be in charge of the Ladies Auxiliary supper, featuring baked macaroni and cheese, cold meats, honey pies, honey cranberry salad, and honey rolls. All beekeepers are cordially invited to sample our educational meetings and delicious supper.

A. M. Southwick,
President.

♦

North Dakota Forges Ahead

Our speakers showed up 100 per cent and all told it was an excellent meeting. In connection with the program of entertainment, the Sundberg Brothers of Fergus Falls, Minnesota, showed their color motion picture of beekeeping operations in their yards at Fergus Falls and travel scenes in connection with a trip in the South and a fishing trip in northern Ontario, where the lake trout ranged from ten to twelve pounds. It was a remarkable series of pictures, and was greatly appreciated. It was good to see and hear from Professor Floyd again. The program centered pretty well around marketing, legislation and beekeeping management. The beekeepers favored some clarification of our present bee law at the next session. At present, only the license fees and the continuing appropriation of $500 per year are available for actual inspection work.

Our inspection program of the past season was more etexnsive and effective than possibly any year heretofore. All told, 11,695 hives were inspected in thirty-three of the fifty-three counties of the state. 143 hives were found with American foulbrood and were destroyed.

New officers elected at the meeting include E. H. A. Fischer, president, Grand Forks; Cyril Miller, vice president, Fargo; Arvid Benson, secretary-treasurer, Box 22, State College Station, Fargo; and for directors, H. A. Schmitt and James Hoy, Mandan, and O. F. Miller, Fargo.

J. A. Munro.

♦

Missouri Pioneer Passes On

J. F. Diemer, Liberty, Missouri, veteran beekeeper and queen breeder passed away January 18. He was well known in beekeeping circles and has been for years a prominnt queen breeder. He bought his first queen of Doolittle and put it into a King hive. His 100 colony apiary was in the heart of Liberty where he carried on with no difficulty. A son, Guy, survives and will continue with the bees.

♦

Indiana Meetings for March

March 9, New Castle, 1:30; March 11, Crawfordsville, 1:30; March 12, Rockville, 1:30; March 13, Terre Haute, 7:30; March 14, Clinton, 1:30; March 15, Brazil, 1:30; March 16, Danville, 1:30; March 18, Monon, 1:30; March 19, Rensselaer, 1:30; March 20, Morocco, 1:30; March 21, Crown Point, 1:30; March 22, Valparaiso, 1:30; March 23, LaPorte, 1:30, March 25, Linton, 7:30; March 26, Sullivan, 7:30; March 27, Bicknell, 1.30; March 28, Washington, 7:30; March 29, Bedford, 1:30; March 30, Bloomington, 1:30.

♦

Charles W. Higgins

Charles W. Higgins, Wapato, Washington, died recently at sixty-two. When he came to Wapato in 1904, he began beekeeping and became a leader, serving as president of state and county associations and in other offices. He was made honorary life member of the organizations. He leaves his widow, Mrs. Elizabeth Higgins, a son, Raymond, and a daughter, Trula, of Wapato.

♦

Vancouver Lectures

Continuing a series begun in February by the British Columbia Honey Producers' Association, lectures will be given in the auditorium of the Vancouver Daily Province on March 1 (speaker not announced), March 15, E. R. Freeman, Fraser Valley inspector, "What We Are Doing for Beekeepers;" April 3, W. C. Mainwaring, an illustrated talk with films which he himself has made.

F. H. Fullerton,
British Columbia.

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Northern New York Meeting, April 27

The home and central house of Roy Keets, LeRay Street, Watertown, will be the meeting place of the Northern New York Association Friday, April 27, with beekeepers from Oswego and Central New York Associations present. Dr. Lloyd R. Watson, Alfred, New York, will be the principal speaker on the program. George H. Rea, extension specialist, and A. C. Gould, inspector, will also address the meeting.

Benj. Hosley,
New York.

♦

Henry C. Cook

Henry C. "Honey" Cook, 85, Omaha, Nebraska, died Friday, January 18. Infromation received from Thos. Atkinson. Mr. Cook retired from the police force of Omaha after twenty-five years service and devoted much of his time to beekeeping, with bees at Elk City, Bennington, and on West Dodge Street. His library on beekeeping is considered one of the best. He was an expert modeler in beeswax. He is survived by his daughter, Mrs. Thomas Atkinson, three grandchildren, Rosemary, David and Eugene, of Omaha.

ADVERTISING PAGES REMOVED

Pettit's Package Bees Still Satisfy

Customers say they are Good Workers and Gentle; Neat Light Packages; Full Weight and No drones; Prompt Service; Satisfaction Guaranteed.

...PRICES...

Two-pound package with queen $2.45
Three-pound package with queen 3.15
Queens, 75c each. Additional pound of bees .70
Generous Quantity Discount.

MORLEY PETTIT :: TIFTON, GEORGIA

Jensen's Bees and Queens

Bred up to a standard, not down to a price. Our customers tell us they are through buying on price. To most of them there is an inseparable affinity between VALUE and PRICE. If 25 years' continuous actual production and shipping experience had taught us nothing more than what it costs to produce a pound of bees or a queen, surely it has done that.

We expect to be in the bee business from now on, and the only way we can hope to do this is by continuing to build on our past reputation for QUALITY, SERVICE and FAIR DEALINGS.

2 Pound Packages		3 Pound Packages	
1- 10	$2.50 each	1- 10	$3.25 each
11- 50	2.35 each	11- 50	3.10 each
51-100	2.20 each	51-100	2.95 each
101-500	2.05 each	101-500	2.80 each

Queens 75c each; $65.00 per hundred

FOR BOOSTER PACKAGES DEDUCT PRICE OF QUEEN

May 20th through balance of season 20 per cent off

Jensen Apiaries :: Macon, Miss.

Italian Bees and Queens

Breeding queens selected from famous north-western clover belt, where we produce honey by the car load. Thirty years' experience in northern and southern states insures you bees and queens of the largest honey producing strain possible.

	1-10	11-24	25-49	50 or more
2-pound packages	$2.45	$2.20	$2.05	$1.90
3-pound packages	3.15	2.85	2.70	2.50
4-pound packages	3.85	3.50	3.35	3.15
5-pound packages	4.55	4.15	4.00	3.75
Untested queens	.75	.70	.65	.60
Tested	1.50	1.40	1.30	1.20

For comb packages add 40c to above prices for each comb. For queenless packages deduct price of queens in quantity from packages quoted above. We ship the package with queen introduced if wanted, this is superior to the so-called loose queen package. We guarantee these queens introduced 100 per cent.

We ship one extra queen or package with each order for 25 or additional 25.

D. C. JACKSON APIARIES — FUNSTON, GA.

MOREHEAD, APIARIES — CONVOY, O., U. S. A.

GET RUNNING'S BEES

And get Honey They satisfy

The kind we use in our extensive Michigan Apiaries. All Italian stock. Service guaranteed. Ask for our circular.

Three pound package with choice untested queen $2.45; Two pound package with choice untested queen $3.15; Choice untested Italian queen 75c; Choice tested Italian queen $1.50. 10% discount on 50 or more. 15% discount on 500 or more.

David Running Apiaries, Sumterville, Alabama — **David Running** Filion, Mich.

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Extracted Honey Wanted

All Grades, Any Quantity

Mail sample, Give description, Quote lowest price delivered in Chicago.

(*Reference, First National Bank*)

NORTHERN CALIFORNIA

BEES and QUEENS

First quality 3-Banded Italians at reasonable prices. Discount on large lots.

GEORGE E. SMITH

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HELLO FOLKS!

Here We Are Again,

STEVENSON'S LINE BRED GOLDENS

Our queens are large, uniform, and very prolific. Our bees are large, the best of honey producers, and so gentle it is a real pleasure to work with us. We are not nervous, and do not swarm until the hive is well filled. What more could any one ask?

So, buy us; try us and you will see. "How Wonderful We Are." Kindly write to

Stevensons Apiaries, Westwego, La.

for descriptive circular. 2-lb. pkg. with queen $2.45; 3-lb. $3.15; Queens 75c each. Discount on 10 and over packages.

For Better Beekeeping Use

DADANT'S FOUNDATION

FIRST CHOICE OF EXPERT BEEKEEPERS

CROP AND MARKET REPORT

Compiled by M. G. DADANT.

For our March Crop and Market page, we asked reporters to answer the following questions:

1. What per cent of 1939 honey crop is unsold?
2. Will it move before new crop?
3. What is the condition of bees?
4. What about honey plants and humidity?

Per Cent of Crop Unsold

The writer is agreeably impressed by the amount of honey which has been sold during the present selling season. We find a near clean-up in the New England States and down the Atlantic coast and across the southern sections, except, perhaps, for some honey left in Louisiana and Mississippi.

Even in Ohio, Indiana, Illinois, and the plains states the crop seems to have been moving fairly well; and we are definitely sure that there is less honey on hand at this time than there was at the same time last year. This fact bodes well for a fairly good clean-up. There still remain some large lots of honey in Illinois, Iowa, particularly in Michigan and Wisconsin, and a few in Minnesota.

The intermountain states still report considerable honey on hand and a demand quite a little better recently than it was earlier, but there is doubt as to whether all honey will move before the new crop. Utah and Nevada still have considerable honey on hand and a draggy market. In the northwestern states and California honey is fairly well cleaned up.

We understand that, at a recent meeting of various bottlers, opinion was that their own stocks would be cleaned up fairly well, that the clean-up generally in the country would be satisfactory, and that there would be comparatively light carryovers, compared to last year.

Will All Honey Move?

It appears all honey will move. It is definitely certain that all will move out of the eastern areas, except perhaps some of the buckwheat crop. Although the buckwheat crop this year was not large, there was quite a lot of buckwheat honey left from 1938. This honey had to be disposed of. All the southern states, including Texas, New Mexico, and Arizona, report fairly thorough clean-ups. Ohio and Indiana report similarly. As a matter of fact, only occasional large lots of honey in the Central West and a considerable number in the intermountain territory prevent what would be a general clean-up.

Condition of Bees

Generally over the country, bees are in fairly good condition. In most northern sections, bees have been confined to hives probably seven weeks; and where hives were not carefully packed, there is danger that, because of the extreme cold, the bees were not able to reach their stores, even though plenty of honey was in the hive. Of course, another danger has been that the prolonged warm spell throughout the entire country last fall made more brood rearing than usual. Consequently, the honey stores provided may have proved to be inadequate to many colonies.

In the southern areas, the extreme cold weather kept bees from honey plants and froze many of the early plants or delayed their blooming. Therefore, it is possible that some colonies may starve. Package breeders, especially, are fearing a season shorter this year by two weeks, though perhaps a more intensive season, which, it now appears, will be pretty well filled with orders. Most southern honey producers are elated because there was not this year the usual warm spell, which advances the honey plants until cold weather returns to kill them off.

In the Southeast, including Georgia and Florida, prospects are extremely good for honey production this year. All factors are favorable to the flow except the early honey plants which are just a little late.

Honey Plants

It is the honey plant and humidity conditions which are the biggest question marks with the beekeepers this year. Bees can always be obtained from the South to fill out losses; but if honey plants are not there, all the wet weather will not make them grow. The drought, or the prolongation of the drought, extends in the North from the New England States across the country, as far as the Rocky Mountains. Northern Minnesota and Dakota, particularly, are dry; and the same drought prevails in practically all of the Canadian provinces.

While there have been considerable snows and some rains to make up the moisture deficiency, the late drought in the fall undoubtedly has cut down on the amount of the white clover plants, and, in many instances, has reduced the amount of young sweet clover plants. Therefore, during the coming spring, moisture and conditions especially favorable to plant growth will be required to produce anything like a normal amount of plants for the coming season.

We believe the most favored section is the South, particularly the Southeast. Texas has been dry until recently, but snows and rains have helped there. Idaho is a very bright spot, with plenty of rain, bees in good condition, and prospects excellent. The same conditions probably prevail westward from Idaho as far as the coast. California this year will probably break into the big production column again. Conditions there have improved following a heavy rainfall; and although the season is just a little late, prospects are much better than last year, when drought and heavy rains spoiled the flow.

Of course, the intermountain territory depends largely upon irrigation. While some reports are to the effect that water in the mountains is still insufficient, we believe that the supply will be normal. Probably there will be less than the usual number of bees in the intermountain section and less than the normal quantity of honey plants.

We do not believe that conditions the country over will be as favorable as they were early in 1939, and yet we had a partial failure in 1939. However, "there's many a slip 'twixt the cup and the lip"; and if there is a favorable build-up season for bees and satisfactory moisture and humidity for honey plants, a good crop may result. But the writer remembers few seasons in which there were as many indications of a mediocre crop as there are at present.

Honey Sales

Even though honey is being disposed of, prices tended to weaken during January and to sharpen a little by the middle of February. Several carloads of honey have been moved to Canada to be packed and shipped abroad. There may yet be a quickening in export demand which will help relieve us of the balance of our 1939 crop.

All in all, honey will move fairly well, but at prices which are far from satisfactory and for which the large packer and the small beekeeper-packer are blaming each other. Considering the volume of honey on hand, there was no reason for the retail, wholesale and jobbing prices of honey to go as low as they have.

WANTED — HONEY
Jewett & Sherman Co.
Milwaukee, Cleveland, Kansas City, Brooklyn

HONEY WANTED Cars and less than cars Mail Samples
C. W. AEPPLER CO., Oconomowoc, Wisconsin

Iverson Honey Company (Not Inc.)
Successors to
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Extracted Honey bought and sold
Reference: First National Bank of Chicago

THE MARKET PLACE

BEES AND QUEENS

CAUCASIAN PACKAGE BEES. Booking orders now. P. B. Skinner Bee Co., Greenville, Ala.

WE ARE CAUCASIAN BEE SPECIALISTS. Write for interesting folder containing prices. CAUCASIAN APIARIES OF CALIFORNIA, RIPON, CALIF.

ITALIAN PACKAGE BEES AND QUEENS. Marshall K. Smith, Mount Vernon, Ind.

GIDDINGS' QUEEN APIARIES. Specialized production of best of queen bees—Italian, Caucasian, Carniolan, Cyprian, and Austrian. Also pure desert honey. Ennis M. Giddings, Riverside Co., Blythe, California.

PACKAGES WITH QUEEN INTRODUCED prevent supersedure and loss of queens. Free folder tells their advantages over others and how we do it. A. O. Smith, Mount Vernon, Indiana.

GUARANTEED QUALITY BEES and QUEENS. Competitive prices. No disease. Prompt shipment. Safe arrival. Satisfaction. Consider trades. Floyd Anderson, Ty Ty, Georgia.

QUEENS — PACKAGES — NUCLEI. Best quality. Paul Cassady, Davidson, N. C.

CAUCASIAN loose queen packages in lots of one hundred or more. Fox Bros., Lotus, California.

GOLDEN QUEENS 75c each excellent quality, hardy, gentle, productive. Health certificate. Service and satisfaction guaranteed. Personally reared. O. E. Brown, Rt. 1, Asheboro, N. C.

ITALIAN QUEENS, Package Bees, Nuclei. Take honey-wax as payment. Homer W. Richard, 1411 Champnolle, El Dorado, Ark.

ITALIAN and CAUCASIAN bees and queens. 2 pound packages $2; queens 75c. We use nothing but the best. Oregon Bee Co., Rt. No. 1, Box 296, Salem, Oregon.

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PACKAGE BEES AND QUEENS—Service. Satisfaction. Sternenberg Bros, Lockhart, Texas.

GOLDENS—Solid yellow to tip. Untested 75c. Guaranteed non-supersedure, pure mating, health certificate, satisfaction. H. G. Karns, Glenallen, Rt. No. 2, Richmond, Va.

Copy for this department must reach us not later than the fifteenth of each month preceding date of issue. If intended for classified department, it should be so stated when advertisement is sent.

Rates of advertising in this classified department are seven cents per word, including name and address. Minimum ad, ten words.

As a measure of precaution to our readers we require reference of all new advertisers. To save time, please send the name of your bank and other references with your copy.

Advertisers offering used equipment or bees on combs must guarantee them free from disease, or state exact condition, or furnish certificate of inspection from authorized inspectors. Conditions should be stated to insure that buyer is fully informed.

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CHOICE EXTRACTED CLOVER HONEY in 60's. R. C. Bish, Successor to Moore Apiaries, Tiffin, Ohio.

HONEY FOR SALE—We buy and sell all kinds, carloads and less. The John G. Paton Company Inc. 630 Fifth Avenue, New York, N. Y.

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FANCY TUPELO HONEY for sale, barrels and 60's. Marks Tupelo Honey Co., Apalachicola, Florida.

COMPLETE LINE comb and bottled honey. Pure clover. Also packed in 5's and 60's. Central Ohio Apiaries, Inc., Millersport, Ohio.

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ORANGE, Palmetto and Mangrove honey in new sixties. Peter W. Sowinski, Fort Pierce, Florida.

FOR SALE—Northern white extracted and comb honey.
M. W. Cousineau, Moorhead, Minn.

HONEY PACKERS—Write us for prices on carload lots of California and Western Honeys. We stock all varieties. HAMILTON & COMPANY, 1360 Produce Street, Los Angeles, California.

WE BUY AND SELL ALL KINDS COMB AND EXTRACTED, CARLOADS AND LESS. H. BLITZ, P. O. BOX 3452, PHILADELPHIA, PA.

HONEY FOR SALE—All kinds, any quantity. H. & S. Honey and Wax Company, Inc., 265-267 Greenwich Street, New York.

CHOICE Michigan Clover Honey. New 60's. David Running, Filion, Michigan.

FOR SALE—Honey by the carload. Imperial Valley Beekeepers Association, 47 Heber Avenue, Calexico, California.

HONEY FOR SALE—Any quantity, all varieties. B-Z-B Honey Company, Alhambra, California.

GOOD CLOVER extracted 6c in sixties; light amber 5½c. H. G. Quirin, Bellevue, Ohio.

COMB HONEY—No. 1 clover $2.75 case; No. 1 amber or buckwheat $2.25. Clover extracted 6½c; amber 6; buckwheat 6c. C. B. Howard, Geneva, N. Y.

FOR SALE—Highest grade clover honey at 5¾c. Edw. Klein, Gurnee, Illinois.

FOR SALE—9 tons of Finest Clover Extracted at 6c f. o. b. Bellevue. N. B. Querin, Bellevue, Ohio.

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HONEY! Ohio delicious extracted white clover. The Health Food fine flavor. In new 60 lb. cans, $3.36 per can; sample 15c. Melrose Apiary, Delphos, Ohio.

HONEY, pure clover, 100 sixties at two for $7.00. New cans. Reference First State Bank. E. M. Cole, Audubon, Iowa.

NEW CROP light amber extracted, new sixties, fine quality. Write for prices. Sample 10c. Meyer Toom, Route 4, Knoxville, Iowa.

CHOICE well ripened, clover honey, $3.25 60-lb. can. M. Noack, Rt. 2, Plano, Ill.

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CASH FOR YOUR WAX the day received. Write for quotations and shipping tags. Walter Kelley Co., Paducah, Kentucky.

ALL GRADES extracted honey wanted. Bee supplies and honey containers for sale. Praire View Apiaries, 12243 12th Street, Detroit, Michigan.

WANTED—Large quantities of chunk comb in shallow frames; also section honey. Central Ohio Apiaries, Inc., Millersport, Ohio.

WANTED—Carlots honey; also beeswax, any quantity. Mail samples, state quantity and price. Bryant & Cookinham, Inc., Los Angeles, California.

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FOR SALE—Our Colorado apiaries located at Manzanola, Colorado, or trade for bees in Southwest Texas. A complete outfit ready to move into. Also good milch cows. Write Millers Caucasian Apiaries, Three River, Texas.

1000 standard 10-frame 2-story stands of bees in good locations and equipment, at $4.50 per stand. No American Foulbrood. Terms. Odie Wedgeworth, Florence, Ariz.

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FOR SALE—400 2-story 10-fr. colonies, A1 condition. $6.00 each. Edw. Klein, Gurnee, Illinois.

100 COLONIES BEES, 8 frame, $5. Honey in 60's. Mrs. Chester Keister, Clarno, Wisconsin.

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CALIFORNIA BEES—100 2-story, 10 frame standard $4.50; 1½ story $3.50; 1 story $3.00. 4 frame nucs $2.50. 2 lb. package, queen loose, $2.25. 3 band Italian stock, free of disease. R. W. Wright, 429 Nevada, El Monte, California.

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WANTED—Several men for 1940 season. Edw. Klein, Gurnee, Illinois.

YOUNG BEEKEEPER would like position in apicultural work. Write Merl E. Miller, Monument, Oregon.

YOUNG MAN who can finance self to run several hundred hives on shares, if the right man can work into the business. J. W. Powell, Mesilla Park, New Mexico.

EXPERIENCED BEEKEEPER, can take complete charge, small apiary. Minnesota preferred. Ed. Klimashesky, Kramer, North Dakota.

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WANTED—Reliable young man of good habits, to assist in our apiaries. State experience and full particulars. Married man considered. N. L. Stevens & Son, Venice Center, N. Y.

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HELP WANTED—Experienced package man. Also helpers in our extensive apiaries. Jensen's Apiaries, Macon, Mississippi.

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WRITE FOR CATALOGUE. Quality bee supplies at factory store prices. Prompt shipment. Satisfaction guaranteed. The Hubbard Apiaries, Onsted, Michigan.

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WAX WORKED into high grade medium brood foundation 15c pound, 100 pounds $11.00; thin super 22c. Fred Peterson, Alden, Iowa.

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9 BASSWOOD SEEDLINGS 2 foot, or 6 Pink HONEYSUCKLE bushes 12 inch, or 25 Caraganna hedging (Siberian Pea Tree) 18 inch, for $1 bill, postpaid. Nectar producers. Lewis-Dadant dealers for this territory. Nicollet County Nusery, St. Peter, Minnesota.

SEEDS of yellow cleome, figwort, wingstem, Bird's-foot trefoil, wild senna and other honey plants, 15 cents per packet, eight packets for one dollar. Melvin Pellett, Atlantic, Iowa.

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THE DADANT SYSTEM IN ITALIAN—The "Dadant System of Beekeeping" is now published in Italian, "Il Systema d'Apicoltura Dadant." Send orders to American Bee Journal. Price $1.00.

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Queen yards are in charge of O. D. Rivers formerly of Powderly, Texas.

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Queens, each	.65

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THREE-BANDED ITALIANS
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Mated Queen, each . . .65
Satisfaction Guaranteed.
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If you want the best at money saving prices try us first.
2-lb. pkg. with queen $1.95
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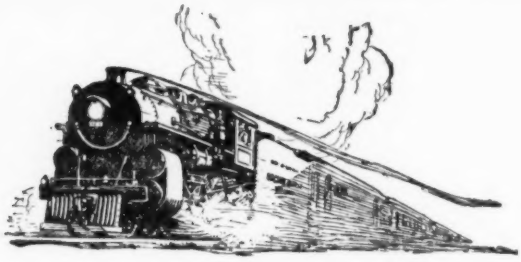
Tested queen, each 1.25
Untested queens, each ..... .65
HOMAN BROS. Shannon, Miss.
(Originally Shaw & Homan)

THREE-BANDED ITALIANS

	1-9	10-24	25 up
Untested queens	$ .75	$ .70	$ .65
2-lb. pkgs. & queen	2.40	2.25	2.00
3-lb. pkgs. & queen	3.00	2.85	2.60

A. W. NATIONS Established 1920 — **DONNA, TEXAS** Quality not Quantity



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Bees and Honey

Established in 1920

American Bee Breeder's Record
Since 1912

A 24-page TRADE MAGAZINE serving "America West of 100°," featuring Triple Phases of BEE LIFE.

Heritage
Environment
and Response

with regular Departments devoted to each phase—

Bee Breeding
Bee Pasturage
Honey Production & Utilization

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RIVERA, CALIFORNIA

Package Bees—Queens

Quality **ITALIAN** Select

Large vigorous queens from Stock {Breeders / Drones} with record crops in North. Gentle—A pleasure to work.

No disease. Health certificate. Ship on your date. Young bees—No drones. Quantity discounts.

WRITE FOR PRICES.

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Why Take a Chance?

Nuclei 2 and 3 frame size with queen. Large orders delivered by truck to northern beekeepers at a big saving, also 2 and 3 lb. packages. Italian or Caucasians.

Write for information and prices.

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Gives the latest news and views of the rabbit world—an illustrated monthly magazine of general and educational features. One year, $1.00; three years, $2.00; sample 15c.

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PURE ITALIAN BEES

As good as can be produced.
Loose or Caged Queen.
Packages at reasonable Prices.
Live delivery guaranteed.
Write for quantity prices.

THE JAY BAKER APIARIES
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A GOOD RULE TO GO BY

Buy your Italian Bees & Queens from
ALABAMA APIARIES
URIAH, ALABAMA
One of the South's Oldest Shippers.

St. Romain's "Honey Girl" Italians

GENTLE—HARDY—UNSURPASSED FOR HONEY GATHERING
21 YEARS, SELECTIVE LINE-BREEDING, NORTHERN PRODUCTION
PROVED STOCK

	2 lbs. bees 1 standard comb brood and stores, with queen introduced loose	3 lbs. bees 1 standard comb brood and stores, with queen introduced loose	2 lbs. bees combless with queen caged	3 lbs. bees combless with queen caged
1 to 4 pkgs.	**$2.40** per pkg.	**$3.00** per pkg.	**$2.20** per pkg.	**$2.80** per pkg.
5 to 9 pkgs.	**2.30** per pkg.	**2.90** per pkg.	**2.10** per pkg.	**2.70** per pkg.
10 to 24 pkgs.	**2.15** per pkg.	**2.75** per pkg.	**1.95** per pkg.	**2.55** per pkg.
25 to 49 pkgs.	**2.05** per pkg.	**2.65** per pkg.	**1.85** per pkg.	**2.45** per pkg.
50 or more pkgs.	**2.00** per pkg.	**2.55** per pkg.	**1.80** per pkg.	**2.35** per pkg.

Additional pounds of bees or combs of brood 50 cents each.

Quality—Service—Safe arrival guaranteed. Louisiana State Department of Agriculture certificate of inspection certifying our apiaries free from disease, with every shipment.

If you have been buying from a shipper who has given you satisfactory service and quality send him your order, he merits your continued patronage. If you have a reason to change we will appreciate your business and promise to do everything we can to please you. A small deposit will book your order in advance. 21 years' experience your guarantee, dependable service and quality.

St. Romain's "Honey Girl" Apiaries
HAMBURG, LOUISIANA

Sturdy Italians from Selected Stock

For better beekeeping use Lighest quality queens and young bees. Quality-Plus-Service has been and will continue to be the basis of our business. Place your order with us and be sure you get what you want at any given date.

2-lb. pkg. with queen, $2.00 **3-lb. pkg. with queen, $2.60**
5% discount for cash booking. **Queens, each 60c** *Order Early.*
NEAL'S APIARIES :: HAMBURG, LA.

Just what U want

A flourishing overweight package, headed by a vigorous, prolific young queen, happily laying on a comb of brood, pollen and honey. Attended by its healthy baby bees. You will rave at the way they make a start, the way our hardy Italian queens stand up against supersedure. Give us a trial, you will be the judge. Name your date of shipment and off they go on the swiftest express. Health certificate and absolute satisfaction or money back. By all means send us your name today.

2-lb. bees and queen on one standard comb	**$2.25**
2-lb. bees and queen on one Modified Dadant comb	**2.45**
2-lb. bees and queen, combless	**2.00**

Additional lb. bees **50c**; Additional comb **50c**; Queens **60c**
Dealers discount 15%

B. J. BORDELON :: MOREAUVILLE, LA.

THE POSTSCRIPT

A clipping from a recent German daily newspaper, received through a friend of this page, is of interest since it shows the restrictions for the distribution of food in that country. "Kuntshonig" or artificial honey, is limited to one fourth of a pound on presentation of the food ration card. It is stated that this quantity can be had in addition to the same amount which children up to 14 years of age are entitled to receive for the period from November 20 to December 17, 1939. Germany once bought a large part of our surplus honey.

♦

What a topsy-turvy world we are living in when our friends in Germany are not permitted to buy more than a quarter pound of even artificial honey at one time at any price, in order that the supply may be conserved, while here in America our beekeepers find difficulty in selling the finest white honey at more than five or six cents per pound. If only all trade barriers could be removed the cause of many of our international difficulties would disappear. Instead of removing them we are constantly increasing the number and making it more and more difficult to transact business with customers at a distance. Of course the present situation in Germany is the result of war, but war also is largely the result of economic pressure.

♦

Recent news reports indicate that experimental work carried on at the Boyce Thompson Institute gives promise of an insecticide derived from the seed of pyrethrum which may replace the arsenates now in common use. Thus we may soon see this plant grown in large acreage as a cash crop. It is such new fields of investigation that may change the outlook of many a farmer and beekeeper. When the farmer finds new crops which are at the same time good honey plants both should prosper.

♦

The discussion of the soy bean grows in interest. Now comes a letter from J. E. Eckert, of Davis, California, to say that while he was in North Carolina he observed that the bees gathered a very good surplus from the soy bean in the coastal section east of Washington. The honey was extra light amber in color, of good flavor and granulated quickly. An average of from one to two supers per colony were produced in summer when no other source of nectar was available.

♦

There are enough reports of honey from soy beans to establish the fact that at times it is a valuable source while very commonly the bees pay no attention to it. It now becomes necessary to check all available information to learn on what kind of soil the yields occur and the variety of beans from which the honey comes. There are hundreds of varieties of soy beans and it may be that only a few of them are valuable to the bees. If so we must know which ones.

♦

Edward Trimble, of Warroad, Minnesota, reports an interesting observation of bees working fireweed in preference to sweet clover when both were in bloom at the same time within reach of the apiary. Sweet clover is usually at its best in Minnesota and the fireweed must have been yielding heavily or else offered nectar with heavy sugar concentration to offer a great attraction to the bees.

♦

An editorial in the February Country Gentlemen referring to the mistakes of agriculture recalls the prejudice against sweet clover and attempts to outlaw it as a noxious weed. The editor asks whether any recognition of its value was published prior to 1913. An article calling attention to its value as a forage crop appeared in American Bee Journal in 1867 and this magazine continued to agitate the subject from time to time until it was finally accepted.

♦

C. E. Watts, of Coquille, Oregon, recalls that in former years he seldom sold honey for less than twenty cents per pound. He blames the big outfits which produce in large quantity and dump their honey on the market in carlots for depressing the price. There can be but little question but that the honey producer must be at fault when good honey sells for less per pound than sugar, as has recently been the case.

♦

Anticipating a visit with Louisiana beekeepers I was unfortunate in choosing my time. Instead of finding the usual balmy winter weather I arrived just ahead of the coldest weather in the history of the local weather bureau. Instead of the bees bringing in early pollen, there was a snow storm and all the trees were coated with ice which did great damage through breaking the branches. Truck crops and fruit were damaged and water pipes in hundreds of homes were frozen. January, 1940, will be long remembered by residents of the southland as a time of very severe weather. We from the North could feel very much at home since it was the kind of weather with which we were very familiar at this season.

♦

George Rea was visiting in Mississippi and we had planned to have a few days together seeing the beemen. It was so cold that George decided to go back to New York to get warm, as his vacation was near its end. The cold snap lasted for about ten days and then came warm weather again. Yes George, the nice weather was worth waiting for. Sorry that you came south so early.

♦

George Bohne, of Luling, Louisiana, is a man to be envied. With a beautiful home and well kept apiary on a plot of ground sufficient in size to make room for a large variety of trees and shrubs but not large enough to be a burden in its care, he appears to have about all that a man can get in the way of worldly comfort. Everything is in perfect order indoors and out and the owner's boundless enthusiasm offers an urgent invitation to passing beemen to stop and chat.

♦

The fact that light honey of mild flavor is the one kind that can be produced in sufficient quantity to enable bottlers to offer a uniform product, is probably responsible for the favor which it finds in most markets. George Bohne has long been a champion of dark honey, dubbed by his friends, "Waffle paste." Of late he has the satisfaction of having scientific investigators announce that dark honey contains more minerals than the light honeys and some special markets are beginning to push it for that reason. We of the clover belt may yet see the day when "waffle paste" commands a premium.

♦

Mrs. J. D. Franklin, wife of a New Orleans beekeeper, is doing a fine job at honey selling in a city department store. She is selling a surprising amount of honey at several times the usual retail price and thereby demonstrating that salesmanship rather than price determines the movement of our product. It often happens that honey sells most slowly where the price is lowest. Too long has our industry tried to move its small output by offering it at lower and lower prices when what we needed was more salesmanship.

FRANK C. PELLETT.